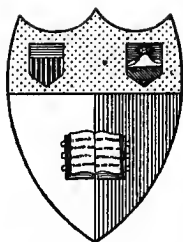


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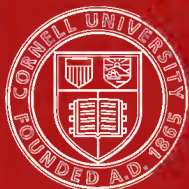
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THE TEACHER OF DRAWING

Supervisors and grade teachers should make drawings large enough to be seen from all parts of the schoolroom

HOW TO TEACH THE SPECIAL SUBJECTS

BY

CALVIN N. KENDALL

COMMISSIONER OF EDUCATION FOR THE
STATE OF NEW JERSEY

AND

GEORGE A. MIRICK

FORMER ASSISTANT COMMISSIONER OF EDUCATION
FOR THE STATE OF NEW JERSEY



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EDITOR'S INTRODUCTION

THE companion volume in this series of textbooks, written by the same authors, has proven very useful to thousands of teachers as a guide in giving instruction in the so-called fundamental subjects of the elementary-school course. The teaching of arithmetic, geography, history, and English, though, is usually found easy in comparison with that of the special subjects, largely due to the better instruction in both subject-matter and methods which teachers in training are given in these fundamentals. In many of our larger school systems, too, special supervisors for each of the special subjects are employed to direct the instruction and to advise teachers as to the best practices and the most satisfactory methods to be employed. In the smaller school systems, however, and in all rural-school systems not organized under the county-unit form of school administration, such special supervision is almost invariably absent. In all such schools elementary teachers must not only teach the fundamental, but the special, subjects as well, without other help than an occasional visit from a supervisory officer and such books as the present number in the series and its companion volume can give.

It has been with a view to affording practical assistance to teachers, so situated, in the management of

their morning exercises, special-day programs, the organization of the seat work for the smaller children, and in conducting the instruction in music, drawing, physical training, play, nature study, and agriculture that this volume has been prepared. The long experience of each of the authors in guiding the work of teachers in our larger city school systems in itself insures a useful and a practical volume, and an examination of the manuscript is convincing that such a volume has been prepared.

ELLWOOD P. CUBBERLEY

PREFACE

DRAWING, Music, Physical Education, Nature Study, and Elementary Agriculture are special subjects, not in the sense that they are non-essential to education in a democracy. They are no less essential than are those subjects often called fundamental, treated in a companion volume, "How to Teach the Fundamental Subjects." These subjects are not luxuries for the few. They are vital parts of a sound and liberal education for all. They will more and more find their place in schools, where they are not found now, as the nature of children and the needs of society become better understood and more generally accepted by school boards as their proper guides in determining school policies.

But these subjects make new demands upon teachers, and school administrators are sometimes reluctant to introduce them, not because they do not recognize their importance but because they fear that teachers are not adequately prepared to teach them. Moreover in some schools where they have been introduced the results appear to be inadequate because they are not taught well. The teachers do not understand the subjects nor how to present them.

It is evident that teachers need help in introducing

these subjects into their school program and in maintaining them there on an educational basis. Those in training need this help and those in service need it, particularly those who cannot have the inspiration and guidance of a living supervisor.

To give this help this book has been prepared. It does not attempt to establish a theory as to why these subjects should be taught in school. Its purpose is to show how they should be taught. Each subject has been treated from the viewpoint of schoolroom practice. It has been the purpose of the editors to present an authoritative, sound, modern guide, free from technicalities, simple plans and suggestions that are the outcome of wide, varied, and intelligent experience — plans and suggestions that have been tried out in many schools and have been found workable and productive of desired results.

The aid of successful supervisors, who are at the same time educational leaders and constructive thinkers, has been sought in the preparation of the several chapters. The editors are under great obligation to them for their contribution of material and for their interest in making the discussions clear and practical.

To the chapters on the special subjects previously mentioned two chapters have been added relating to special phases of a teacher's work on which help is often needed. One of the chapters treats of Morning Exercises, Closing of School, and Special-Day

Programs. This was prepared by one who has had notable success in her own rural schools in these activities. The other chapter treats of Seat Work in Primary Grades. Herein may be found ways of employing the study periods of primary school children in tasks that are at the same time interesting and educating.

For those who wish to extend their self-instruction, directions for Collateral Reading will be found at the close of each chapter, and a Bibliography at the end of the book. No other single volume, so inclusive in its special field and so practical, is available for teachers so far as the editors know.

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HOW TO TEACH THE SPECIAL SUBJECTS

CHAPTER I

MORNING EXERCISES — CLOSING OF SCHOOL — SPECIAL-DAY PROGRAMS

To know is not the end of life, neither is it the highest goal of the school. Beyond teaching and learning mere knowledge lies teaching and learning right attitudes toward life and cultivating those fundamental virtues that determine individual and national greatness and prosperity — truthfulness, sincerity, the companion of truthfulness, inclination toward the good, wholesome ambition to achieve, spiritual sensitiveness, respect for law and order, and patriotism.

Although the home, the church, and the community has each its peculiar duty for the cultivation of these virtues in the lives of the oncoming generation, upon the public schools in a democracy the responsibility rests heavily and they are carrying it with increasing insight and success. More and more the public schools are becoming arenas in which these virtues are applied. Through the study of civics, history, and hygiene pupils are understanding the place of these virtues in the life of individuals and of communities, and there

are many opportunities for spiritual uplift and inspiration that arise or that may be created during the school day and school year that may be made educationally fruitful if the opportunities are wisely utilized. Among these opportunities the opening and closing of school and the "special days" are particularly rich in possibilities, and it is to the discussion of these that this chapter is devoted.

MORNING EXERCISES

It is highly important that the teacher set aside one period a day in which to talk to the entire school upon whatever subjects are most vital at that time. Here is her opportunity to widen the children's horizon, to teach them, by her own example as well as by instruction, to think independently and courageously, and to inspire them with what is true and beautiful. There is opportunity also to give them a cosmopolitan outlook through the variety of ideas to which she introduces them. Current events, biography, literature, art, music, nature, history, ethics, — all are at her disposal. She can make her children world citizens, and they will be the better fitted for local and national citizenship.

The material that a teacher may draw upon for this intimate converse with her children is limited only by her own resourcefulness. Whatever is worthy in books, periodicals, and newspapers may find a useful place in the ethical as well as in the intellectual training of

her children. She should also keep in mind that when a child thinks for himself, listens understandingly to others, *reads by himself intelligently*, and adopts right principles of action and high ideals, he is living successfully, and therefore she should use her well-selected material to stimulate these things.

She can economize time, especially in a country school, by teaching the same things to all the children at one time. Suppose that preparation is being made for a Christmas program in which a dramatization of Dickens's *Christmas Carol* is to be given. Country children as a rule hear too little reading, and should hear good reading by the teacher. By presenting the story in installments as dramatically as she can, omitting unimportant parts, she can give a most excellent lesson in interpretative reading to all classes at once. By the quality of her own reading, helped by a few questions and remarks, she can paint the character of poor miserly Scrooge with such vividness that every child in the room will register a determination never to be one himself. When a sympathetic understanding of the story has been developed, the children are ready to read it to the teacher and to dramatize it.

Perhaps there is a book the children ought to be reading for themselves, but no one seems disposed to do so. How stimulate an interest in that book? Try reading a few interesting pages of it to the pupils some morning, and when you find them enjoying it, pause and ask a few questions like these: "How many of

you enjoy the story?" "How many of you would like to read the book for yourselves?" or "Who would like to take the book home to-night and keep it until you have read it through?" Frequently this is all the stimulation necessary to make that book popular thenceforth.

Utilizing other school activities

Music rightfully falls in the morning exercise. Here the children may feel its relation to the whole scheme of things. What better time to teach patriotic songs than in February when the children are looking forward to the patriotic exercise in which those songs shall appear? What better writing, spelling, or language lessons can be desired than those resulting when the child carefully records in a notebook that is sacred to him all the new songs and quotations that are to be used in the program? The very fact that he is consciously recording these things, not only for immediate use, but to consult in later years, is an incentive for him to do his best. That notebook can become an interesting bit of school history for the child, if everything entered is properly dated and the whole is carefully indexed when it is completed.

The value of the memorized quotation cannot be overestimated. Besides being an excellent training for the memory, it introduces new ideas into the child's mind, influences the development of his character, and gives an appreciation of good literature. A memory

gem, understood and well-spoken, will do more for the child than a whole week of the desultory reading lessons frequently found in a rural school. Sometimes it is preferable to give one memory gem to all the children to learn. Occasionally a whole series of quotations can be given within the course of several days, arranged under titles like these: —

“Famous Sayings of Eminent Men.”

“Some Thanksgiving Thoughts.”

“Quotations from Longfellow.”

From these series children can select favorites for memorizing, thus affording opportunity for expressing individual taste. In a one-room school one may soon find the younger children eagerly appropriating the quotations of the older ones, causing the latter to seek merrily and sometimes distractedly for other gems when called upon unexpectedly to recite them in the morning exercise. The one-room school has its disadvantages, but have we truly found all its possibilities? What a wealth of material the younger children fall heir to in hearing the things taught to the older ones!

But the morning exercise need not be confined to preparation for the special exercise. It is often preferable to teach some important lesson to all the children at once. A timely lesson in hygiene is needed and understood as well by the younger children as by the older ones.

Hygiene lessons

There is an epidemic in the near-by town — scarlet fever, perhaps. Everybody knows the farmer's customary trip to town on Saturday with either a part or all of his family, partly for business, and partly for social reasons. As a rule some child catches the disease, exposes others by coming down with it in the school, and then the already too brief term becomes shortened by the month or six weeks it takes the children to recover. The moment the teacher hears of a case in town, she should acquaint her pupils with all the facts they need to know to protect themselves. She should describe dramatically, if she can, the disease, its origin, manner of spreading, danger, and possible after-effects. She should emphasize each one's duty in avoiding the disease, not only for his own sake, but for that of others. Therefore, "Would it be hard to give up a few pleasures for a short time in order to save tired mother from a long anxious period of nursing as well as to avoid the danger of exposing a great many other children? Think of the loss while absent from school for so many days. So much important work is going on and every person in the class is needed at his post every day." While talking let the spelling lesson for the day appear on the blackboard. There will be a list made up of words, as, *epidemic, disease, scarlet fever, contagion, contagious, sanitation, unsanitary, expose, exposing*. Discuss the meanings

of these words and let the children use them in sentences. You will thus have given a good language and spelling lesson through which your lesson in hygiene will be made more effective.

Ethical lessons

Whatever subject is being taught, the ethical training of the child should not be lost sight of. History and literature afford many opportunities for this, and many incidents involving ethics may be referred to in the morning exercise. Local incidents furnish many excellent occasions to drive home some truths the children should know. Some good action done in the community can be made the finest object lesson in the development of character. In every locality there are dozens of individuals in whom the noblest qualities in manhood and womanhood are to be found.

A piece of ground is needed for a school garden. The school grounds are too limited for that purpose. A farmer whose land adjoins the grounds donates an acre to the school. The teacher points out to the children the public spirit of the man. He is expecting no reward for his acts but that which will come to him in the honor and affection of others. Thus may be impressed the benefits and satisfactions of community service.

The children should be made to feel a sense of gratitude toward their parents and their community for the privileges of education in the comfortable quarters that have been provided for them. That gratitude

can be best shown in the use they make of their opportunities.

Take a single occurrence like the following: A blizzard drifts the roads so badly in a country district that they are impassable and school must either be closed for several days, or continued with the ranks so broken that the results are highly unsatisfactory. The fathers of the children take matters in hand. Arrangements are made over the telephone to gather up the children in sleds. By the coöperation of the men the roads are broken, the drifts are shoveled in the worst places and the children arrive at school on time. If the teacher does not make use of her opportunity that day to help the children appreciate what their fathers have done in giving up their time and facing the weather for them, and does not help those children to determine to do especially good work on that day, she has failed where she had a fine opportunity to develop generosity, unselfishness, and gratitude. She also has failed to set the high value upon education that the farmers did when they left their problems of sheltering and feeding stock under severe weather conditions in order to take their children to school.

Another local matter comes up. An unobtrusive item is in a local paper about a good position coming to a well-known young man in the county. John was industrious, honest, not more brilliant than his fellows, but he saw the importance of preparing himself for his place in life by getting a good education. True,

he had to let some pleasures go by. He could not wear quite as expensive clothes as some, nor make money quite so early in life as they. But he is making up for all that now because of the large salary he receives. Besides that his work is interesting, and he can enjoy many intellectual pleasures the others never can appreciate because they did not develop themselves.

By the right kind of coöperation between parent and teacher the child can be helped to make important decisions in his life through the inspiration received in the morning exercise. Suggestions that are intended for a particular child should be given in such a general way that he feels no personal reference to himself, and is far from suspecting that his problems have been a matter of serious conference between his parents and his teacher.

Here also is the place where public recognition can be given to a child who is seriously trying to overcome some fault or to do something else equally heroic. The teacher's knowledge of the situation must help her to decide whether this ought to be done in the presence of the child or during his temporary absence from the room. A timid child can be much helped by praise for his efforts at the right time. For example, everybody in the room knows what a weakling our soft-voiced, timid, puny, little Jamie is. But he has done one thing to-day that shows the presence of some moral fiber in his make-up. Perhaps he came to school in the face of some great obstacle or temptation. Perhaps he did

some unselfish act or made a sacrifice for parent or schoolmate. Who knows, the teacher may influence for good his whole career by expressing in the morning exercise her pride and happiness in his achievement. She can speak of the admiration of his schoolmates who see him growing into the kind of boy every one respects. Timid Jamie blossoms under this praise and is twice as willing and strong to overcome the next difficulty. Best of all, the teacher has helped not only Jamie, but every child in the room who has been led to appreciate Jamie's effort. Hereafter they will give him encouragement. By this means an ideal family relation can be developed in the schoolroom in which children will sincerely try to help strengthen one another's character.

These are practical lessons drawn from the human life that the children touch, but they cultivate sympathy with the spiritual experiences of humanity expressed in literature and song. The Bible is a storehouse of such lofty expression and, where communities do not object, the best of its prose and poetry should become familiar. The pupils may learn and recite passages, and the teachers may profitably recite and read to them selections from the Bible and other of the world's best literature.

Current events

Current events can be the means of giving some of the most instructive lessons in history, government,

spelling, and language, to say nothing of patriotism. In one instance the appointment of a new member to the supreme court bench was made the occasion for a careful study of that department of government, its purpose, members, qualifications, tenure of office, reason for tenure, and salaries. Such words as *chief-justice*, *associate justices*, *interpret*, *judicial*, *judiciary*, *supreme court*, *appeal*, and *statute* made the spelling list for the day, and appeared in original sentences for the children's language work. Newspapers and periodicals furnish much material that can be used to give a foundation for work in current history, civil government, language, and spelling.

Biography

The place of biography in the morning exercise cannot be overestimated. Children should come to know famous inventors, heroes, statesmen, writers, musicians, educators, and reformers of the past and present. They may learn from them the great lessons in perseverance, self-denial, loyalty, generosity, and attainment in spite of difficulties that those lives had to meet.

The anniversary of the birth, the death, or some great achievement of a noted character may be the occasion for teaching his biography. School libraries should contain a liberal number of books on biography which children can read for themselves after interest has been stimulated by the morning exercise. Good arti-

cles about living men and women of note are always available, and can be read with much profit to the children. Take, for example, the inventor, Thomas A. Edison. Throughout the year interest in this wonderful man may be kept alive by the frequent notices that appear about him in the papers. The children should know not only his youthful struggles under great difficulties, but should be able to see how these enabled him to be a vigorous, persevering, studious man.

Study of pictures

Political cartoons should hold an important place in the study of current events. Children should be able to read cartoons and understand their value in moulding public opinion. A careful description of a cartoon makes a good language exercise. Gradually the most famous cartoonists will become known to the children. Show them that a cartoonist requires a wider education than the mere development of his powers as an artist.

Other pictures should accompany instruction in the morning exercise whenever they can be of use. When, in the illustration of some ideal or ethical lesson, a teacher incidentally uses a world's masterpiece in art and inculcates in the children a love for the picture because of an understanding of its meaning, the lesson is complete. At slight expense the teacher can secure very good copies of famous pictures for use in the school. She is wise if she begins with a few of the best

and teaches them well, for her purpose will be defeated if she overwhelms the children with the many pictures at her command and impresses none of them upon their consciousness. Let us suppose that preparation for a Christmas exercise is in progress. Introduce the children to the Sistine Madonna. Bring out the beauty and meaning of the picture. Acquaint them with the artist and the present location of the original, as matters of information.

In the hand work, as gifts for members of their own families, they may mount some of the pictures they have studied during the year. In this way such pictures as Le Rolle's "The Shepherdess," Bonheur's "Horse Fair," Hoffman's "Christ," Millet's "Angelus," and any of Landseer's pictures will be introduced into the community to stay. To the boys of the hero-worshiping age "Sir Galahad" should by all means be introduced.

In the program for Mother's Day recorded below, reference is made to the presentation by the children of a copy of Whistler's "Mother." Interest was stimulated in the picture, not by questions about the date of birth and death and the nationality of the artist, but by pointing out the fact that he made a portrait of his mother that would last. What a mother she must have been to deserve this tribute from her son! The beautiful expression of her face shows the life she must have led to look like that when she was old. Then the teacher called attention to the repose, simplicity,

and lack of frills in the picture. She emphasized the thought that "if you are not beautiful at sixteen it is Nature's fault; if you are not beautiful at sixty it is your own fault," for

"We grow like the things our souls believe,—
And rise or sink as we aim high or low."

Devotional exercises

In the days of our ancestors schools were opened with so-called devotional exercises, consisting of readings from the Bible and repeating the Lord's Prayer. In many schools each pupil was required to have a Bible as a part of his textbook equipment and from it he read a verse daily. Doubtless this exercise became in many instances a formal observance with little in it that was really devotional, but on the other hand, many people look back to those "morning exercises" with respect and the belief that their influence was spiritually helpful.

It is still a common practice for the teacher to read a passage from the Bible without comment and for the pupils to bow their head and unite in saying the Lord's Prayer, although doubtless nowhere is it insisted that all repeat the prayer.

This question has a present-day importance, "Can the personal attitude of respect for the universal values that inhere in our human life be fostered in the public school without antagonizing those who have strong and divergent religious views?"

The answer depends more upon the teacher's own breadth of view and tolerance than it does upon the doing or saying of any particular thing. But it does seem that, where there is no prohibiting law and where the sentiment of the school district is not opposed, teachers may still make judicious use of that long-time standard body of religious literature, the Bible, to the permanent benefit of her pupils.

As to the Lord's Prayer, let the pupils learn to chant it. If they sing it thus with clear enunciation, well-modulated voices, and devotional feeling, it cannot fail to foster the development of genuine reverence.

Morning exercises should be timely

The teacher's success with the morning exercise depends largely upon her ability to adapt her subject-matter and its presentation to the individual needs of her children and community. Success will be easier to attain if she is a good reader and conversationalist. Her English also should be of such high order that it is a model for her pupils to copy. For source material she should have access to the following: —

1. One local newspaper.
2. One good metropolitan paper.
3. One of the best periodicals (a weekly preferred).
4. A farm paper suited to her section of the country (if she is a country teacher).
5. Books on:
 - a. hygiene;
 - b. nature study — trees, birds, insects, flowers, seasons;
 - c. agriculture.

In the use of a newspaper or other periodical children should be taught to discriminate between the important and the unimportant. It requires good judgment on the teacher's part to make this discrimination, but it can be done and is done by many teachers. The material that is trivial — fires, accidents, murders, and the like — should be omitted in the discussions and the children should be led to see why they should be omitted.

CLOSING OF SCHOOL

Kinds of Exercise

The end of the day's work should be marked, not necessarily by a formal exercise, but by a fitting close suitable to the time — a rounding-out of the day, so to speak. It may be a brief consideration of a thought that has been emphasized in a history, a reading, or a language lesson.

Announcements of interest to the school and community can be read, if they have not been given before. Suggestions can be made for profitable conversations around the table at the evening meal. Ask the following questions occasionally, "What are you going to talk about at home to-night, Mary?" A half-dozen children will be eager to reply, and if the day's work has been inspiring you will receive an interesting résumé of its activities. One child is going to relate the story told in the morning exercise; another will speak of the lecturer who talked about the

raising of poultry; another will describe the invention discussed in the history class; still another the picture studied in art. This can be made a successful device for reducing inane conversation and the senseless and harmful gossip frequently characterizing table conversation.

Sometimes a concert quotation, appropriate to the dominating spirit of the day, season, or hour, can be given. If the children have been planning or planting for Arbor Day, for instance, or have been doing some garden work either at home or at school, it would be suitable to close the day with a quotation like this from Whittier's poems: —

“Give fools their gold and knaves their power;
Let Fortune's bubbles rise or fall;
Who sows a field or trains a flower
Or plants a tree, is more than all.”

Above all things avoid a standardized stereotyped exercise. Its effectiveness lies in the newness and freshness of its content and presentation. Vary the exercises occasionally by an interesting report, a timely talk, a masterpiece in poetry or prose, or a song, given sometimes by the teacher, sometimes by individual pupils or the school as a whole. The exercises should by all means be adapted to the needs of the school and the community, and only the teacher who will take the trouble to study these needs will be as useful as she desires to be.

These exercises should be short. Often a stanza from a good song or hymn may be sung.

Quality of exercise

The closing exercise should be an echo of the morning exercise. The day has been filled with successes and some failures. At times there may have been lack of harmony among the pupils and between teacher and pupils. But the children should close their day's work in a hopeful spirit and with, on the whole, a sense of satisfaction.

The child that was corrected for some fault should go home with no feeling of injustice, but with a consciousness of a new opportunity to-morrow.

This is no time for fault-finding, if indeed there is ever properly a time for it in school; no time for emphasizing failures, no time for "lecturing." It is the time above all other times in school for cheerful optimism, for the forward look, for commendation for successes, and for encouragement. The pupils should go from their school back to the community with the glow of coöperative effort by which they will be the better able to use their abilities that have been trained in school to promote the welfare of the community in which they live.

SPECIAL-DAY PROGRAMS

Obviously the character of special-day exercises should be both ethical and intellectual. Individuals should go away from them with higher ideals than they had before coming and with new food for thought.

Only material really worthy the attention of the audience and the efforts of the participants should appear on the program. Unfortunately there are few books on the market to-day that contain in organized form good material for such programs, because the demand for it has not yet made itself felt. The teacher, therefore, must rely largely on her own judgment, and she should exercise great care in the selection of subject-matter. She should frequently ask herself such questions as, "Is that worth a child's learning?" "Has it ethical merit?" "Will it increase love for the beautiful and true?" The program should consist of the best to be found in music, in literature, in art, and in current and past history. The preparation of the pupil for rendering his part should give him training in appreciation and expression.

The program should have unity

If patriotism is the theme, all parts in the exercise should have some bearing upon that subject.

A discordant program given in a country church recently illustrates the lack of unity. It was a Children's Day exercise of extreme length. Every pupil was honored with a place on the program. The recitations used for the occasion were mere doggerel. Long piano solos did not enrich the program, but afforded several young ladies opportunity to make their appearance. Incidentally their parts served to demonstrate how indifferently music is taught in the rural

parts of our country. A hoop drill by young ladies was entirely out of place. A young men's quartette sang "Juanita."

To listen to this program the church was packed. There was not even standing-room. The audience stayed patiently in the sweltering heat for over three hours, so great is the hunger for something to break the monotony of country life. A golden opportunity was lost! The hearts of those people could have been stirred through suitable exercises. Appropriate children's poems, plays, stories, and music from writers and musicians of merit might have been selected. Some fine passages and stories relating to childhood from the life of the Great Teacher could have been read. A brief but earnest talk about our obligations to children should have been made by some one capable of giving it. After such a program not one parent would have gone home without an increased reverence for the sacredness of childhood and a renewed determination to make a fuller, richer life possible for his own sons and daughters.

The following is an example of a Christmas program that is really educational and also illustrates unity and brevity:—

A Christmas Program

1. Christmas greeting. (The entire school, massed in front facing the audience, say in concert, "We wish you all a very merry Christmas.")
2. Christmas quotations. (Children remaining on floor

and answering to roll-call with appropriate memory gems.)

3. Song service: —
 - "While Shepherds Watched." Stanzas 1 and 3.
 - "Christmas Carol" (Sears). Stanzas 1 and 4.
 - "Holy Night."
 - "Antioch." Stanzas 1 and 3.
4. Christmas in Other Lands. (Brief talks by group of older children.)
5. Songs: —
 - "God Rest you Merry, Gentlemen." (Old English carol.)
 - "O Come, All Ye Faithful."
6. Play: "The Birds' Christmas Carol." (Adapted from Kate Douglas Wiggin's story.)
7. Songs: —
 - "Three Kings of Orient." (Old English carol.)
 - "The Fanfare and Christmas Carol."
 - "We Bring Our Gifts" (while little children distribute their gifts to parents).
8. Song: "Santa Claus." (Sung by primary children and followed by innocent Christmas fun with Santa Claus.)
9. Burlesque: "The Day After Christmas." (A brief two-scene play.)
10. Song: "Jingle Bells."

The program should be short and varied

Great length of program and monotony should be avoided. Even a short exercise is fatiguing if it is unvaried. By interspersing music and the lighter parts of the younger children the interest of the audience can be held. However, the younger children must not be sacrificed for the pleasure of the audience. They do their best work in the early part of the program before they are tired.

All children should have a part

It is our business to develop all children, but how are we to give every one an opportunity for expression without overcrowding the program? Here is where the value of short, instructive, well-spoken quotations from the writings of eminent writers comes in. For a patriotic program quotations like the following can be given: —

“I am not a Virginian, but an American.” (Patrick Henry.)

“We must all hang together, or assuredly we shall all hang separately.” (Benjamin Franklin.)

“Be sure you are right, then go ahead.” (David Crockett.)

“Let our object be our country, our whole country, and nothing but our country.” (Daniel Webster.)

“Liberty and Union, now and forever, one and inseparable.” (Daniel Webster.)

“Be just and fear not; let all the ends thou aimest at be thy country’s, thy God’s, and truth’s.” (Shakespeare.)

“No man’s vote is lost which is cast for the right.” (John Quincy Adams.)

Practice in correct expression is given and a familiarity with great authors is gained if, in reciting the quotations, the little children make complete sentences and give the name of the person who said the words; as, “U. S. Grant said, ‘Let us have peace.’” If the teacher gives the historical setting when teaching these gems and acquaints her pupils with the historical figures who wrote or said them, the children will read them with such feeling that the moral effect upon the listeners is unquestioned. But, best of all,

the children are reading understandingly and are gaining an æsthetic appreciation of good English expression. The teacher will do well to apply these thoughts to current local history whenever she can. Children who study patriotic quotations in the light of community experiences cannot fail to have an unusual grasp of the history lived by the men whose words they are using.

A patriotic exercise follows that suggests what may be given in February or July or on any patriotic occasion by children in a mixed school.

A patriotic program

1. Song: "The American." (Music by R. Stahl.)
2. Concert recitation: "Breathes there a man with soul so dead." (Scott.)
3. Roll-call. (Children respond with patriotic quotations.)
4. Play: "Washington's Birthday." By a group of little children. (If the program is given on July 4th a little play "Independence Day" by small boys could be given.)
5. "Our National Songs." By a number of children who give a brief history of each song, each explanation being followed by the singing of a stanza or two of the song described. (Last song, "Star-Spangled Banner.")
6. Address to the Flag. (Henry Ward Beecher.) By an older pupil.
7. Quotation in concert: "'Tis the schoolhouse that stands by the flag." (Butterworth.) By little children who appear on stage with flags.
8. Flag drill. By eight or more girls, followed by one of the girls reciting: —
9. "The American Flag." (Drake.)
10. Song: "Our Fair Land Forever." (Harrison Millard.)

In giving such a program as this, a large number of children may take part and yet the performance not be made too long. In number five of the program, about twelve children could be given a place. The flag drill and the concert reading give opportunity for indefinite numbers and still brevity may be secured. In case the program is to commemorate the deeds of some national hero, as Washington or Lincoln, a brief story of his life may be added and some of his characteristic sayings or rules of conduct might be given.

Above all, the preparation for a patriotic program should instill love and loyalty for their country in the hearts of the children. The startling apathy in the present war of many in our rural population and the open disloyalty in some centers are conclusive testimony to the importance of teaching patriotism more effectively than we have done in the past.

In selecting the individuals for the program the teacher should be guided not only by her ideal of a successful entertainment, but also by the educational needs of the children. Injustice to all children is done when there is overemphasis of the dramatic powers of one child simply because he has the ability that will secure a successful program. Ethical harm that may be done that child in developing selfishness and a sense of superiority far outweigh any good wrought by the exercise, and the latent powers of expression in the other children are not brought to the surface.

This does not imply, however, that any one should serve in a capacity he is absolutely unfitted to fill. Only *careful study of the child* will reveal its needs and abilities.

Community interests should be considered

A community has many forces and these should be utilized and developed. Make use of all the musical talent that exists, however limited it may seem, and music will grow in your community. It is wonderful how ways and means for procuring musical instruments and for instruction can be found when once there is created an interest in music.

To develop power of initiative and leadership in the community the teacher should throw responsibilities and burdens on the children as soon as they become qualified to assume them. This cannot be done at the outset, and it will always be more or less difficult for the teacher, but, when she considers that the character of her pupils is often best developed by bearing responsibility, she will be willing to give whatever time and thought are necessary to this end. She may be sure that her efforts will not go unrewarded.

A school-teacher at the close of her third year found herself too busy with important community affairs to give a promised closing-day program. As she was considering what she could say to the children, a bright idea came to her. Here was an opportunity to test the fundamental value of her work as a teacher.

She named a committee of five children between the ages of ten and thirteen years. A few suggestions were given as to where to find materials, and they set to work. Each member of the committee chose a responsibility; each one had a group of children to whom he assigned and taught parts. The busy teacher those last few days saw earnest groups rehearsing during intermissions wherever a quiet corner could be found. She kept her hands off and they did not trouble her with a single question until they submitted the program to her on the last day. So well had her previous work in teaching reading and music been done that a very creditable program was given. These same children now assume greater responsibilities in the more elaborate programs they are able to give.

Community days

By common consent a community may adopt certain fixed days of the year for annual celebrations. The community referred to in the foregoing commemorates by special observance five events during the year: —

1. In February, a patriotic exercise, the occasion being either Lincoln's or Washington's birthday.
2. May, Mother's Day, to honor motherhood and to teach children to reverence it.
3. July 4th, Independence Day, the great national holiday of the year. That all may participate in this celebration without stopping the harvesting of grain one rural community is accustomed to gather *in the evening* at the school. The program includes community sing-

ing, music by the Community Band, speaking, an appropriate historical play, living pictures of historical interest. It is given in the school yard and brings contiguous neighborhoods together in an ideal way.

4. October, Anniversary Day of the organization of the school and the community. A very important gathering during which past history of the locality is graphically reviewed with lantern slides, showing past conditions and hardships and also efforts made at betterment. Progress during the past year is detailed, community growth summarized, and future hopes outlined.
5. December, Christmas Day. There is a wealth of material in music, art, and literature, and the program motivates most of the reading, language, spelling, history, and handwork for the month.

There are many advantages in fixing dates for annual celebrations. The community is linked together by common purposes. The events are far enough apart to prevent interruption of other activities or overtaxing community interest. Children can be taught economy and system by the careful storing-away of materials used in decoration, such as flags, garlands, and decorative crêpe paper, with the view to using them again the following year. They can learn that, with the expenditure of a few cents additional, entirely new effects can be produced with the same materials. The children's notebooks show a record of valuable material in music, literature, and art, and because they know its lasting value, they put their best efforts into the mechanical execution of the work. Not much formal drill in penmanship and spelling is necessary with such motivation.

A program for "Mother's Day" in the community mentioned above is given here. The exercise was planned so as not to take too much time for preparation. It was to be the children's loving tribute to their mothers. Passages paying tribute to motherhood were collected from various sources. These were discussed and read with feeling during the reading period. A few are given here: —

"The Lord could not be everywhere, so he made mothers."
(Jewish Rabbi.)

"Hundreds of stars in the pretty sky;
Hundreds of shells on the shore together;
Hundreds of birds that go singing by,
Hundreds of bees in the sunny weather.
Hundreds of dewdrops to greet the dawn;
Hundreds of lambs in the purple clover;
Hundreds of butterflies out on the lawn;
But only one mother the wide world over."

(George Cooper.)

"I remember my mother's prayers — and they have always followed me. They have clung to me all my life."
(Abraham Lincoln.)

"The mother's heart is the child's schoolroom." (Henry Ward Beecher.)

"Mother is the name for God in the lips and hearts of little children." (Thackeray.)

Other gems were selected from the writings of Field, Riley, Macaulay, Kipling, Margaret Sangster, Dickens, George Eliot, and from the Bible.

Without the knowledge of their mothers the children bought a framed reproduction of Whistler's "Portrait of his Mother." The presentation of it to the community was one of the closing features of the program.

Several periods for handwork, language, and penmanship had been used to prepare a folder inviting the mothers to the exercise. This folder contained a half-penny size picture of Whistler's "Mother," a suitable quotation, and the brief invitation. The lessons learned in arrangement, in neatness, and in composition, while writing the invitation, can be inferred.

The young men and women of the community, former pupils of the school, assisted the children in the singing. An effective touch was given to the program by having a young man, in whose promising voice the community feels a deep interest, sing "Mother Machree."

In preparing the program the teacher and children talked things over freely, discussed how much their mothers meant to them, and considered some of the little things they could do to lighten mother's cares and save her strength. The exercise was planned to make tired mothers happy and show them that the sacrifices they were making to give their children an education were appreciated. "Which would our mothers prize the more," the children were asked, "for us to honor them by buying a lot of white carnations from the hothouse in the near-by town, or by gathering with our own hands the beautiful flowers so plentiful in the fields and woods around us?" Their answer was the latter, because they had been taught two things: first, never to depend upon the town for

anything that the country could supply as well; and second, that a gift made with our hands is appreciated far more by the recipient than one bought with money. Accordingly, early on Sunday morning, happy voices could be heard over the whole community as busy fingers were gathering the flowers with the dew still upon them. The flowers were collected and turned over to a committee that decorated the building for the afternoon exercise. The blackboard was transformed by a tasteful border of crab-apple blossoms. Wild-plum blossoms and lilacs made beautiful masses in corners. Bluebells, wild sweet-williams, pansies, spring beauties, and anemones were in evidence everywhere. Violets were tied in countless nosegays with green and white ribbon and set in shallow water to be kept fresh for distribution by the flower girls in the exercise, "Blossoms for Thoughts." The grandmothers were honored with especially large nosegays.

In "Blossoms for Thoughts" the Spirit of May, robed in white and carrying a flower basket, calls to the children and asks what unselfish thoughts for mother they can express in order to claim the flowers they would like to bestow on mother. Accordingly the children come forward and reply in rhymes expressing thoughts especially suited to each child. Ruby, with the little sister at home, promises to take care of her; Ezra, who finds it so hard to obey any one, will listen to mother in the future; Alice, an only child, is going to learn to dress herself and brush her

own hair; restless Winfield, whose mother is in the hospital, will keep quiet when she comes back. This is followed by a general distribution of flowers to all mothers present by the two attendants of the Spirit of May.

The program ends as it began with a number indicating the close ties by which the community is held together. Following is the outline of the program: —

Program for Mother's Day

1. Quotation: "If you can do nothing else in the community center than draw men together so that they will have common feeling you will have set forward the cause of civilization and the cause of human freedom." (Woodrow Wilson.)
2. Song: "America."
3. Song: "Home, Sweet Home."
4. Quotations: "Tributes to Mother." By seventeen children.
5. Song: "Child and Mother." (Eugene Field.)
6. Recitation: "A Boy's Bill."
7. Recitation: "Beautiful Hands."
8. Vocal solo: "Mother Machree."
9. Recitation: "Birthday Prayer for his Mother." (Van Dyke.)
10. Song: "My Mother's Memory."
11. "Blossoms for Thoughts." By nine children.
 - a. Song: "Greetings to Mothers."
 - b. Dialogue between Spirit of May and children.
 - c. Song: "Blossoms for Mother" (while children distribute flowers to mothers).
12. A brief history of "Mother's Day," followed by
13. Presentation of a framed portrait of Whistler's "Mother."
14. Song: "Blest be the Tie that Binds." School and audience.

The Thanksgiving season affords much material for instructive as well as pleasing programs. The harvest may be emphasized and a special study made of corn. Related material may be found in such songs as "We plough the Fields" (translated by Jane M. Campbell), and "Thanksgiving Song" (Gaynor); in the Bible, the Parable of the Sower, and the Twenty-third Psalm; in art, Millet's "Gleaners." Such stories as "Old-Fashioned Thanksgiving" (Alcott), "Ezra's Thanksgiving out West" (Eugene Field), and sketches from "Standish of Standish" (Austin), may be read to the children, and reproduced by them as a part of the program.

In a one-room country school, where the children ranged from six to twenty years of age, the following program was given. The children had been making a study of Puritan customs. They made a simple attempt at costuming. Ordinary printing-paper was used to cut collars and cuffs for the boys. The girls wore plain white aprons and kerchiefs over their dark dresses. The mothers coöperated in making the occasion of historical value by serving a simple New England dinner for which the children designed and made an attractive and appropriate folder containing the menu, in which Plymouth Rock, the Mayflower, Indian arrowheads, and the dates, 1620-1914, were artistically involved. Best of all was their unanimous decision to include on this folder a sentiment they had learned to understand and appreciate: —

"O strong hearts and true! Not one went back in the May-flower!

No, not one looked back, who had set his hand to the ploughing."

Program for Thanksgiving

1. Reading: The Twenty-third Psalm. (Bible.)
2. Song: "We Plough the Fields." School and audience.
3. Reading: President's Proclamation.
4. Songs:
 - "Thanksgiving Song." (Beach.)
 - "Thanksgiving Day." (Edmonds.)
5. Reading: "The Embarkation."
6. Reading: "The Landing of the Pilgrims." (Hemans.)
7. Play: "Courtship of Miles Standish." By older children. (Adapted from Longfellow's poem.)
8. Song: "Thanksgiving Song." (Gaynor.)
9. Reading: "The First Thanksgiving Day." (Preston.)
10. Quotation: "O strong hearts and true, etc." In concert by all the children.
11. Play: "The First Thanksgiving Day." By little children.
12. Song: "We thank Thee." (Emerson.)

Preparing the program

Special-day programs should as far as possible be made up of exercises drawn from the regular school work. This has been noted before, but it will bear reëmphasis. It will be a natural incentive to effort if the pupils know that their best drawings are to be exhibited, that their best compositions, maps, arithmetic papers, etc., will find a conspicuous place on Parents' Day. In short, a great deal, probably most, of the preparation can be made through the regular

school activities. Moreover, by thus making the training a part of the daily work of the school the program will be given much more effectively, and what is more important its educational value for the pupils will be greatly enhanced.

Again, besides the stimulus given to reading and other subjects, the preparation of special-day programs, if made in this way, will go far to give the pupils permanently a poise, a freedom from self-consciousness, that will help them in after-life. To them speaking to an audience will be as natural as speaking in earnest conversation to a friend. They will be ready to perform the public duties that their place in the community requires.

COLLATERAL READINGS

Note. — As emphasized in the foregoing chapter the material for school exercises should be gathered *in the course of the regular school work*. The following books may be found useful to supplement the sources referred to on page 15:—

1. *Morning exercises*: —
 Morning Exercises for All the Year. Joseph Sindelar.
2. *Poetry and prose selections*: —
 - a. *Selections for Study and Memorizing.* Riverside Literature Series.
 - b. *Golden Hours.* Prudence Lewis.
3. *Telling stories*: —
 - a. *How to Tell Stories to Children.* Sara Cone Bryant.
 - b. *Stories and Story-Telling.* Angelina M. Keyes.
4. *Biographies*: —
 - a. *Makers of the Nation.* Fanny E. Coe.
 - b. *Captains of Industry.* James Parton.
5. *Inspiration*: —
 - a. *Ethics for Children.* Ella L. Cabot.
 - b. *Ballads of American Bravery.* Clinton Scollard.

- c. *American Patriotic Prose and Verse*. Stevens and Stevens.
 - d. *The Golden Rule Series of Readers*.
6. *For special days*: —
- a. *Our Country in Poem and Prose*. Eleanor A. Persons.
 - b. *Recitations for Assembly and Class-Room*. Anna T. L. O'Neill.
 - c. *Our American Holidays*. A series of books edited by Robert H. Schauffler, giving the history, observance, spirit, and significance as related in prose and verse of —
 - Arbor Day*
 - Christmas*
 - Easter*
 - Flag Day*
 - Independence Day*
 - Lincoln's Birthday*
 - Memorial Day*
 - Thanksgiving*
 - Washington's Birthday*
 - d. *To Mother*. An anthology of mother verse with an introduction by Kate Douglas Wiggin.

CHAPTER II

MUSIC

Good music and its place in school

Good music is first of all a life-long source of enjoyment. Not only is it elevating and refining, but it contains that spark of life that warms the heart. It has the charm of perpetual youth.

Our school task, as it relates to music, is clearly twofold. We must teach the children how to produce good music and we must teach them to appreciate good music.

Singing is the universal form of musical expression and it should be taught in every school, because all children should know how to sing.

There are three phases to the teaching of singing: (a) teaching how to use the voice so that musical sounds are made rather than noises; (b) teaching how to sing songs by imitation or *rote*; (c) teaching how to sing the conventional musical characters, i.e., how to render with the voice the melodies and harmonies that lie hidden in the printed staff. This is *reading music*. This chapter is given chiefly to the discussion of the teaching of these three phases of singing.

Teaching to enjoy music, i.e., teaching an appreciation of music, is very similar to teaching apprecia-

tion of literature, painting, sculpture, or architecture. Some there are who believe that appreciation of art in any of its forms cannot be taught. Without denying or admitting this, it certainly is true that children, as well as adults, who have learned to sing good music with intelligence and with feeling, and those who have listened again and again to good music, are better attuned to enjoy it than are those who have not had these experiences. This is considered briefly in the latter part of the chapter.

While singing is the more universal, instrumental music is the highest form of musical expression. Every child should have an opportunity to learn to play on some instrument, but the purpose of this chapter precludes any but a brief reference to the place of instrumental music in the schools.

THE VOICE

The importance of voice production has never been fully recognized nor appreciated. This vitally important element in music-teaching has been neglected. To teach the reading of music without giving voice production its proper place and emphasis is a waste of time, energy, and money. The ability to read music is useless without the ability to properly produce tone. Only those who properly produce the voice can be relied upon to maintain accuracy of interval and pitch. The first duty of the public schools, then, in music, is to train children to make tones correctly.

The requirements for the proper production of tone or voice are few; in fact, there are but three, and they are also the requirements for general good health. Therefore, while training pupils to sing properly, teachers are also promoting the health of their pupils.

The first of these requirements is fresh air at the right temperature (65 to 68 degrees). Ventilation must be good or no permanent fine quality of tone can be gained.

The second is proper breathing. The condition for proper breathing is correct position, sitting and standing. When standing, pupils should rest equally on both feet; the body should be slightly inclined forward from the hips; the ears, shoulders, hips, and instep should be in line. When sitting, the best position is that in which the singer sits as far back as possible in his seat, the body from the waist up being inclined forward, chest up (but not strained), forearms resting on the desk, elbows far apart (the desk must be of the right height). Resting the arms on the desk removes their weight from the shoulders and neck and frees the ribs below the arm pits. Do not allow the arms to be folded behind the back nor crossed over the chest. Any position that contracts the chest is bad. Seated in the correct position (be sure the back is not humped) it is almost impossible to breathe other than correctly.¹

The third requirement for proper voice production

¹ See "*posture*" in chapter on "Physical Education."

is the emission of tones free from all disagreeable qualities. To secure this the vocal organs in throat and mouth must be relaxed. The child who sings with a soft, sweet tone, with face and neck muscles relaxed, sings correctly. This relaxation may be gained by the training suggested in the following paragraphs, but it depends also on fresh air, good ventilation, and good position, upon which emphasis has just been laid.

Quality of tone

All teachers should make a study of the physiology of the throat and larynx from the voice-teacher's standpoint. Some excellent books on this subject are given in the bibliography at the end of this chapter.

Up to six years of age the child should sing in a voice not much louder than a whisper. The singing periods, or any periods of voice use, should be very short. From six to twelve years of age the soft tone, with increased range, should be continued. The singing periods may be gradually lengthened to about twenty minutes. At the age of twelve the child voice should be at its prime. No practical differences are found in the voices of girls and boys up to this age, except that the voice of the boy will be stronger, richer, and fuller than that of the girl. This is due to the more vigorous physical exercise participated in by the boy that develops in him a stronger physique.

All voices of children should be soprano. The

writer has tried more than twenty-five thousand voices during his experience and has found no real contralto voices among children under the age of twelve years. A child of this age with a low voice would be almost a freak. Occasionally a boy's voice will be found that changes about this time. This is the exception, however. A slight knowledge of the laws of sound will convince any one that a short thin string cannot produce a low pitch. Some children will be found, who, on first hearing, will appear to have low voices; but with proper handling these children will be found to have the "high voice." As soon as a child finds this high voice he falls into its use almost unconsciously. Exceptions will be found among children with adenoids. The removal of the adenoids generally raises the voice, showing that the low voice was unnatural, being brought on by inflammation that thickens the vocal bands.

Monotones

All normal children can learn to sing. Normal children are those who have no malformations due to disease, such as the results of measles, scarlet fever, etc. Imbecile children must be classed as subnormal.

Any normal child who can raise and lower his voice in speech can raise and lower it in singing. Imitation is the best method of curing those that appear to be monotones. Many teachers insist that these "out of tunes" shall listen while the others sing. This method

will cure but few. It is just as reasonable to expect a child to learn to swim by watching others as it is to expect him to learn to sing by listening to others. If he would sing he must try for himself. Children's voices respond very quickly to the effort that comes with "trying." Most monotones will learn to match pitch in a few trials by attempting to imitate a child who can sing. Have the singing child make a tone, telling the monotone to watch the lips of the singer. Immediately let the monotone try to imitate the singer. Partial monotones will be almost instantly eliminated. More stubborn cases will be started in the right direction by a few such trials. If this fails, have the monotone try to imitate a siren whistle, a bird call, or some other sound of nature. The attempt to imitate the call of the cuckoo is one of the most effective remedies (pitch the call high). Occasionally the child will not be able to imitate anything. Find the pitch, high or low, that the child most frequently sounds in his attempts to sing and have him slide his voice up and down till he finds how to "slide." From then on the task is easy and requires only patience and persistent effort to gain success. Never tire the child in these efforts. Ten seconds a day, till cured, is time enough to give a child individually. If you can take him to a piano or reed organ, the lesson will be more quickly learned.

Children in the first grade respond readily. Those of the second grade, who have been neglected in the

first, take more time. The longer this work is delayed, the more difficult it becomes. Do not give up. If the child has no physical defects he can be cured. Singing in tune is more a matter of placing the tone correctly in the mouth than it is of "ear." Many great violinists, who never play out of tune, cannot sing in tune. Their "ear" is certainly not defective. In exceedingly stubborn cases it might save time to have the child physically examined as to condition of hearing apparatus and vocal organs. All monotones should be cured by the end of the first year in school.

Combined grades, bringing together children of widely different ages, complicate training in voice production, as the younger children are likely to try to imitate the heavier tone quality of the older children. Danger to the younger children can be minimized by seating heavier-voiced children in the front of the room just back of the monotones if there be any. The lightest voices should be in the back of the room. All should sing softly.

Loud and soft singing

How softly should children sing? So softly that the united tones of sixty to seventy children cannot be heard outside the room when doors and windows are closed. There is nothing sweeter on earth than the singing of little children in this manner. By the time this habit becomes fixed it will be found that a louder tone, which yet retains the same sweet quality, is pos-

sible. It is not always politic to try for this result at once. Communities have so long been accustomed to harsh, discordant singing in the schools that the change should be wrought gradually or such a hue and cry may be raised that the school singing will be discredited.

The Sunday School is a serious offender in this matter of tone production. It can be changed only when the children from force of habit use the same tone in the Sunday School that is used in the Day School. Parents are slow to accept the change in style. Many will support their children in not singing at all if the change to soft singing is insisted on suddenly. The parents will need as much education in this as the children. Their education must come through the children.

Seating plan in combination grades

In combination grades place all the light, sweet voices in the back of the room. Seat all the monotones in the front of the room. The strongest, heaviest voices should sit immediately back of the monotones. Seated in this way the light voices will not be injured by trying to imitate the heavier ones. The heavier voices will not be dragged down from the pitch by the monotones. The monotones will be helped by hearing correct pitch coming from behind them. This is trying on the teacher and the visitor. However, the teacher ought to sacrifice her nerves and "ear" rather

than work an injury to the children. A word of explanation to the unenlightened visitor will be sufficient to set him in the right way of thinking.

The changing voices of children

No real vocal difficulties are encountered up to about the sixth grade. In this grade with children twelve years of age and over a new and very serious phase of voice development is encountered. It may not present itself till later, but is frequently found in this grade. This difficulty, this stumbling-block, is the changing voice. Once encountered it is constantly present even through the high school. It is a difficulty that can be surmounted if a little common sense is brought into play.

The change in the voice of the boy causes a drop of an octave in pitch. An entirely different quality of voice is the result. In the girls a drop (lowering) of about a fifth (five tones) in general range and a thickening of the tone quality results. In the boy the larynx increases rapidly to almost twice its former size. The vocal chords double in length and become thicker. The vocal chords of the girl increase in the proportion of five to seven in length and also thicken. With the girl there is but little increase in the size of the larynx. Perception of the change in the voice of the boy is very apparent, as his voice frequently performs some very queer antics, making supernatural changes in a lightning-like manner from a sepulchral bass to an

ethereal soprano and — down again. Owing to this forced recognition of a changed condition fewer boys' voices are now injured than are those of girls. The change for the girl is much more dangerous, as it is not so perceptible. The symptoms of change in the girl will be a light hoarseness or huskiness. There will be no sudden transition from high to low pitch. From day to day her voice will vary, one day being a soprano in range, the next, an alto. She should be carefully watched by the teacher and placed where she belongs for that day.

The boy seldom loses his high voice (soprano voice), and it does no harm to continue to use it, if he can be persuaded to do so. His new voice is so man-like that he will probably prefer it, and worse, almost every boy in the room will try to imitate him and want to sing "bass!" This desire of the boy to be "man-like" is the real hindrance of a changed voice. It not only demoralizes tonally the boy who has it, but it demoralizes all the other boys in the room. Be patient till the newness wears off and things will go along very well, even if the voice is temporarily roughed up a bit.

The important precaution is to strain no voice during this period of change. At this age more voices are ruined than at any other time. Some advise the boy to stop singing during this period. If this is right for fifteen minutes a day, why not advise him to stop talking the remainder of the day? Obviously such advice is wrong. The chances are that, if he stops

singing at this time, he will never start again. The boy who has sung correctly up to this time has little difficulty during this period. He generally drops to alto, then to tenor, then to the voice, either tenor or bass, that is to be his permanently. This permanent adjustment is not, however, fully established till about the age of twenty-six.

Fortunately but few changing voices appear in the sixth grade. Eternal vigilance, though, must be the attitude of the teacher from this point on.

While the change in the girl's voice is more dangerous, because it is not so discernible, the danger disappears if the voice is placed each day where it belongs. No interference with the regular voice work should occur.

Strive, not only in the music classes but in all classes, for correct use of the voice. Correct position in sitting and standing is most necessary for those who show changing voices. As the child sits and stands during this period, he is likely to sit and stand through life. He is growing rapidly not only in voice but in body. Give him frequent resting spells by alternating sitting and standing. The correct way of sitting is the most comfortable.

Excluding the few changing voices in the sixth grade, up to and through the eighth grade the tone quality of the child is at its best. It is wonderful in its beauty of quality. Boy choirs — good ones — draw their singers from these grades. Teachers who

can visit a large city should take advantage of their opportunity to attend some church that has a good boy choir. Perhaps the best in the country is that of the Paulist Church in Chicago.

Much space has been taken for this discussion of voice. Too much could not be given to it, for it is the most important problem in public-school music. Every one has a voice. He will need it constantly whether he sings or not, so the training will be useful to him every day of his life.

Correct pronunciation, enunciation, articulation, and the support of these, breathing, are the mediums through which one must progress. Analyze your own speech. Any mistakes you make in speaking will be magnified from six to eight times in singing, singing being about that much slower than speech.

PHRASING

Intelligent singing depends upon correct phrasing. The phrases of the poem and of the music should agree. In case of disagreement the poetic phrase must govern. Carelessness in this matter is a common fault with many prominent singers. Disregard of punctuation marks often leads to ludicrous effects. In the familiar song, "Oh, Promise Me," the punctuation of the second verse does not agree with the music phrase. The majority of singers fail to notice this with the result that the singer makes the startling request to "Let me sit beside you in your eyes!" Phrased prop-

erly this line should be divided, thus: "Let me sit beside you, (breath) in your eyes seeing the vision of our paradise." This ignores the music phrase that ends on the word "eyes"; but if it is desired to make sense the verse must be sung as here indicated. "Lead, Kindly Light," is habitually phrased incorrectly. In this hymn disregard the music phrases and sing according to the punctuation. There is not a song of several verses in existence that does not need to be carefully studied in regard to phrasing. The school music-books abound in cases where it is necessary to use discrimination. Always phrase according to the punctuation.

ROTE SINGING — GRADE I

Selecting the songs

In using rote singing as a basis for sight reading a definite succession of songs should be planned. All initial efforts in singing should be through imitation; but the work should not be haphazard. Let the first songs of the primary grades be short, of easy, well-marked tonality, pure melody that does not need accompaniment, and above all let the poem be one that the children can understand and enjoy. The songs should be "for children," not "about children." Many composers fail in this. They grow old so quickly that they forget what they liked when they were children and substitute what they think children should like. A simple way to find what children like

is to try the songs on them. Make this trial without comment or effort to point out what should be liked. Teach a few songs. After a few days ask the children to name the songs they wish to sing. From these winnow out those that have objectionable features and retain the others.

“The pigeons fly home when the sun goes down,
As THE SUN IS APT TO DO, [subtle wit]
Then they talk, and talk, though what they say
Is nothing but ‘Coo, Coo.’ ”

A class of experienced teachers agreed, unanimously, that this song was clever and would appeal to children. It was taught to an unusually bright first grade with other songs. No comment of any kind was made. The song was never asked for afterwards. Subtle wit is not the kind for children. The song — a trifle — “Little Jumping Joan,” —

“Here I stand, little jumping Joan,
When nobody’s with me, I’m always alone,” —

found instant favor. One of the smallest children observed, “Of course she was alone if no one was with her.” This little song remained a favorite.

The material in songs for children is so abundant that plenty of them may be found that children will like. At the end of the chapter will be found a list of books that are rich in such material, although it is not intended to imply that every song in each book is suitable.

Songs of the seasons should be sung in the seasons to which they belong. There are enough songs about fairies, brownies, and soldiers to last several years without repetitions. "Game songs" are valuable if the actions are timed with the music. The songs of Jessie L. Gaynor (*Songs of the Child World*), the *Progressive Music Course*, the *Hollis E. Dann Music Course*, and Alys E. Bentley's compositions are rich in such material.

Songs embodying patriotic sentiments should be thoroughly taught. Even our National Anthem, "The Star-Spangled Banner," is possible if the proper tone quality is insisted upon. The writer was of the opinion that most of our patriotic songs were too long, but, since the entrance of our country into this World War, he has been forced to change his opinion. He has found that first-grade children in the first month of school insist on singing the longer songs. They do these songs with zest and ease. Not only has he found that the little ones learn them, but that they teach them to their parents. "America," of course, will be sung. The "Marseillaise" in English may also be used effectively. Be sure to pitch all of these rather high. It is the low tones that are dangerous to the child voice.

In considering rote songs examine them as to tonal ease. Those with scale progressions and easy skips along the fundamental chord lines are the best. The latter progressions are easier at first than the for-

mer. The teaching of the scale is not decried, but untrained voices move through the skips of a chord with greater ease (*Do, me, sol, do. Re, fa, la*, etc.). The octave is the easiest interval to discern. Use songs that have plenty of these chord successions in the melody. Do this, not to try to teach these intervals, but as the best means of showing differences of pitch to monotones and of establishing key perceptions for all.

Rote songs should be used also to improve tone quality and accuracy in pitch. In range keep the songs for the first grade within the limits of the treble ("G ") clef (staff). An occasional tone above or below will do no injury, but the general range should be with a preponderance of tones in the middle of this range.

Showing the pupils

A piano is a great help in teaching rote songs. An organ will do, but a piano is better. Either a grand or square is preferable to the modern upright. The low-built instrument enables the teacher to face the class. The player piano and talking machine can be used to great advantage by the teacher who is not a musician. Before resorting to the piano have the children learn the words. Then play the song using a decided *marcato* touch (well marked), so that the melody stands out from the accompaniment. When the children can hum the melody, let them put the

words to it. In playing for the children at this stage use a *staccato* (short, detached tone) touch that will not cover up the voices of the singers. The melody and words being mastered, accompany the children in the very best style possible so that they may get the benefit of the complete composition. Teaching without a piano is a much slower and less accurate method.

When teaching by voice, the teacher should sing *for* the children, *not with* them. He who sings with the children only covers up their mistakes and robs them of initiative. The teacher who sings *for* the class and then listens while the class repeats what he has sung hears any mistakes and is free to correct them immediately. The ability to anticipate a mistake and assist with voice or instrument at just the right instant to prevent the mistake is an attribute of the successful teacher. This power of anticipation comes with experience. To acquire it is worth the most persistent effort on the part of the teacher. Only to prevent the children from making a mistake should the teacher sing with them, and then not more than two or three tones in succession. These tones to be sung in such a manner that the children do not realize that they are being helped.

The right pitch for a song should be taken from some instrument of absolute pitch (piano, organ, pitch-pipe, or tuning fork). Do not guess at the pitch. The best musician will occasionally vary widely from

the pitch. After getting the absolute pitch sing the entire song through several times without letting the children even hum. Then sing the first phrase and have the children try. Take the other phrases in turn till all are learned, then combine them. Listen attentively when the children sing to detect errors in tone, interval, rhythm, or word. The pupils will sing what they have heard. If they make a mistake it will be because the teacher has made a mistake; she has slighted tone, interval, or rhythm. A mistake once fixed is difficult to correct.

Rote songs incorrectly taught with poor tone quality, inaccurate intervals, and slovenly rhythm will be very detrimental to the pupils' musical education. A song correctly, sweetly, precisely sung with proper diction, pure tone quality, and clearly marked rhythm will be of inestimable value to them. First, make a selection of good material; second, be sure the songs are sung in a "musicianly" way. If the teacher cannot sing, let her choose a child whose parents, older sisters, or brothers take interest enough to teach the song to the child. Use this child to teach the songs to other pupils. Any teacher will soon learn to recognize when a song is correctly sung. A "talking machine" may be used if no other way is found; but a word of caution must here be interposed. Do not let the children try to imitate the tone quality of the adult heard in the record. Copy the *sweetness*, but not the "thickness" and strength of the adult voice.

In using the talking machine to teach a song the poem should first be learned. Then let the children listen to the reproduction from the machine. Next, sing very, very softly with the machine. Lastly, try the song unaccompanied. If the children sing softly enough, it gives the teacher an excellent opportunity to compare the melody from machine and voice and to detect errors on the part of the children.

Do not give much time to one song. It is better to have several songs in the learning at the same time. Songs of from four to eight measures may safely be treated as one phrase for teaching purposes. Long songs should be the exception. When given they should be taught one phrase at a time, as suggested previously. Where there is a change of key involved between two consecutive phrases the two phrases should be taught as one.

Tempo (rate of speed)

The *tempo* (rate of speed) should be slow enough at first to allow each word to be heard distinctly, to be clearly enunciated and properly pronounced. Quickened the *tempo* gradually as the song is learned. Never drag the time. Slow singing and dragging are two distinct things. Some songs require a slow *tempo*, but no song should be dragged.

Do not make the common mistake of setting marching songs at too slow a *tempo*. A slow *tempo* makes the children take too long a step. The regulation ca-

dence is one hundred and twenty steps per minute. Full step for adults is thirty inches. Graduate this step from twenty-eight inches in the upper grades to fifteen inches in the lower grades. Girls do not take the long step gracefully. For this reason the boys should accommodate themselves to a shorter step when marching with girls. Children of widely varying heights cannot march together effectively.

Expression

Sentiment should not be exaggerated. If it is of the right kind and the *tempo* is right, the children will of their own accord sing with the proper expression. Songs that require much "interpretation" from the teacher are not the right sort for the children.

When motions are to be used with the song, the song should be committed thoroughly to memory before the motions are undertaken. All motions, gestures, marchings, and dancing should be in exact accord with the meter of the composition.

The teacher's voice

A man in teaching the lowest grades should use the *false* (false, or "soprano" voice). Even this voice is too heavy for the children to imitate. A woman should use the lightest voice she can produce, avoiding, however, a thin, flat quality of tone. Do not copy the quality of the elocutionist who imitates a child singing. This results in a miserable quality, the very

quality that is to be avoided. The elocutionist is always parodying the child voice just to get a laugh. A contralto should find her "head voice." She has it and will be able to use it if her voice has been properly trained. In case either a man or a woman cannot sing a song at the right pitch, let him or her sing for the children at a lower pitch; but on having the children sing, start them at the right pitch. This way, while not satisfactory, must be resorted to at times.

Number of songs in Grade I

The number of songs taught in the first year will be determined by the length of the songs taught and the ability of the teacher. Not less than two songs of good length should be taught in a month. If short songs are used, as are found in the *Congdon Primers* (excellent), from fifty to a hundred songs can be learned in the first year.

Results of rote singing

Rote songs are used to gain good tone quality, accurate pitch, well marked but flexible rhythm in singing, and at the same time to cultivate a sense for good music that leads to the enjoyment of it. The results desired are placed in order of importance. Appreciation of music, arousing a desire to sing or play, is only an aggravation if the voice and fingers are not first controlled. Most boys do not like to sing because they lack voice control.

ROTE SINGING

In Grade II

In the second grade rote singing occupies a smaller place than in the first grade. By the plan here suggested it is the sole means of teaching children to sing during the first year. There are modifications of this plan as shown on a later page, but the writer believes that nothing is gained by hurrying children into the study of written music. But in the second year rote singing should be used chiefly for enjoyment and pupils should begin to learn to read music. However, all that has been said concerning rote singing in the first grade applies equally in the second grade, although songs of slightly greater length and wider range of voice may be used.

During the first two weeks of school songs of the previous year are reviewed for the purpose of perfecting them as the connecting step with note reading. After this rote songs should be used for the enjoyment they afford. The shortest song can be made of value if sung properly. A song that is not worth singing well is not worth singing at all. Books containing many of the rote songs should be placed in the hands of the pupils. Their learning ability being quickened they will be able to sing about the same number of songs in this grade as in the first, although they will spend less time upon them.

In Grade III

The only difference in this grade will be in the character and length of the songs. There will be less time for rote singing because attention must now be given to "reading music."

In Grade IV

In this grade rote singing should be incidental. From now on too much rote singing creates a lazy mental attitude. But care should be taken that "note songs" are as interesting as "rote songs," for, if this is not attended to, the note singing will suffer and lag.

In Grade V

A few rote songs may be used. As a rule, however, only those songs should be sung by rote that are not contained in the readers, but that the entire school should know; for example, songs that are to be sung in a general assembly of the school or community.

In Grades VI, VII, VIII

Rote songs will be used in these grades only when music is first being introduced in the schools and the children cannot read music.

READING MUSIC

All can learn to read music

It is an old untruth that only those who are especially endowed musically can learn to read music. Two requisites alone are necessary for the reading of

music — a sense of rhythm and a sense of tonality. The rhythmic sense may be aided through marching, gesturing, and dancing in time to music. The sense of tonality comes through hearing music, instrumental and vocal, and through trying to sing. Tonality is the sense through which tones assume a definite relation to each other and to a common tone. This sense is best developed by rote singing. Either exercises or songs, or a combination of both, may be the medium. Do not try to sugar-coat your method. No deception is necessary to gain application of the mind if the subject is presented in an attractive, interesting, energetic fashion.

The majority of voices being united through rote singing, and, in the case of monotones, through the use of certain exercises to place the voice, the first step in actual reading may be taken. It is useless to attempt the teaching of reading until this is accomplished, because incorrect intervals will become fixed voice habits difficult to eradicate. After the "tuning" process is so far completed that the scale is being comprehended as a whole through songs which have scale successions, teach the syllables: "*Do, ti, la, sol, fa, mi, re, do.*" Do not apply the syllables until the succession of tones is correctly known. The syllables will be of no assistance unless the pupils realize the proper relation of these syllables to one another and unless they are able to sing them in tune.

Syllables are important

Results have proved the worth of syllables. They give a definite way of doing a certain thing. Do not be afraid to use the scale and to teach it. It is not an alphabet. It is a vocabulary to be learned and a musical yardstick by which intervals may be accurately measured. Teach the scale through any medium, but teach it. By knowing the scale is meant that, given any one member of a certain group of tones known as the scale, the other members immediately come into mind in their regular succession. For example, sound any pitch, and give it the name of a certain member of the scale, *fa*, for instance; instantly the whole series of tones of which *fa* is the fourth should come into mind. It is only when this relation is conceived that the scale is known. When a subconscious sense of this kind is gained, then tonality is well developed. It is not necessary to teach songs that contain the tones of the scale in regular order at first. Many good supervisors do not pay any attention to this, but it is easier if they are learned in order.

From rote to note singing — Song Method

There are practically but two methods of making the transfer from rote to note singing. The most popular one (as it gives the teacher the greatest opportunity to display his teaching ability) is the so-

called "song method." A song, having been learned by rote both by words and syllables, is placed on the board or displayed on a chart. The teacher then sings the words and points to the notes. Next, he points to the notes as the children sing the words. Third, the teacher points to the notes and sings the syllable names. Finally, the children sing the syllables as the teacher points to the notes. After several songs have been sung in this way books containing the songs just sung from the board are placed in the hands of the children. (1) The teacher shows the children how to point to the notes in the book. (2) He sings the words as the children point to the notes. (3) The children point to the notes and sing the words. (4) The syllable names are sung by the teacher, the children pointing to the notes. (5) The class points to the notes and sings the syllable names. Another of the old songs is now selected and sung in the same way. This second song should be in a different key from the first. Finally, after having sung a couple of dozen songs in this way, a new song is selected and the children point to the notes and try to sing the syllable names at once. This is the more complicated way of transferring from rote to note singing.

From rote to note singing — Direct Method

The simpler and more direct way is to teach the scale progression through song. When the song is accurately sung and the syllables are known, show

the representation of the scale on board or chart and let the children sing the syllable names as the teacher points to the notes. From this "whole" take shorter and more irregular successions, varying the keys. Use a few song tunes from chart or board and then take up the books. *This is a formal drill*, but should not be carried on in a formidable manner. Make such exercises snappy and of short duration. The pointing should be done with a gliding motion of the pointer, but at the same time there must be firmness and decision to it. Later, when meter is taken up, the pointer may be used more as a beat indicator, tapping gently under the note that is to come on the regular division or pulse of the measure. The teacher should not sing with the children, except occasionally to give the pitch when he feels the pupils are about to make a mistake. Use an instrument to give the starting pitch. Always test the pitch at the close to see if the pitch has been adhered to. Tonally this is the beginning of reading.

The teaching of rhythm is more complicated. Not that there is really any complexity in rhythm itself, but that there is much mind laziness and carelessness in the world. The difficulty is to get each one in a class to concentrate his mind. When the rhythm sounds easy, the correct interpretation has been given. As long as it is cumbrous it is wrong. Music containing freakish combinations of rhythm is not fit for the schoolroom.

MUSIC COURSE — GRADE I

Discovering and arranging the voices

On the first day of school begin in a systematic way to sort the voices. Place the monotones in the front of the room. A quick way to make a general classification is to sound a tone of rather high pitch, "C" (third space), or better, "D" or "E," just above it. Imitate a locomotive giving short, sharp blasts. Have the children try to imitate. When all are sounding or trying to sound the pitch tell them to keep it up. (No trouble will be encountered in getting this exercise started — there may be some in getting it stopped.) Pass quickly from one child to another, leaning over so that the mouth of each child comes near your ear. Do not stop at all where the right pitch is being given. Where a wrong pitch is given pause long enough to make an effort to correct the fault. Make a record of the children at whose desks you pause. Later all of these children will be seated across the front of the room, the worst cases being in the very front seats. A child responds with the right pitch so much more readily if the tone is sounded by another child. Have a child who can sing stand before one who cannot. Direct the poor singer to watch the mouth of the singer in front of him. The pitch-giver then sings the tone desired and the other tries to imitate. The child with the faulty voice *must* watch the lips of the singer. If this is done an immediate

cure of the monotone is generally the result. Children who do not respond to this treatment will have to have special help from day to day. (See suggestions in previous pages.)

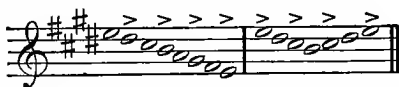
Second step

After making a hurried assortment and rearranging the seating scheme, teach a song. Select the songs from the very beginning to give a sense of tone relation. Short songs of only one or two measures do not do this satisfactorily. Use songs at least eight measures in length if in two-four meter, or four measures in length if in four-four meter.

Introducing syllables and the staff

A few seconds each day should be given to each child who has trouble with pitch. When all, or practically all, the voices are in tune, i.e., after from six to eight weeks, introduce the syllable names in either of the two ways previously mentioned. This introduction of the syllable names should come so naturally that the pupils scarcely notice it. Neither teacher nor child should be able to tell, exactly, at the end of the year just when the syllables were first used. The beginning of this reading work may come in two or three months or be as much delayed as the eighth or ninth month. As soon as the class can sing simple tone passages from the hand signs or oral dictation, show the notes on the staff. The initial efforts from

the staff should be from passages in which no meter or rhythm is shown. These elements may be supplied by the pointing of the instructor:—



Scale passages and chord intervals being tolerably well sung, introduce passages in very simple two-part measure: —



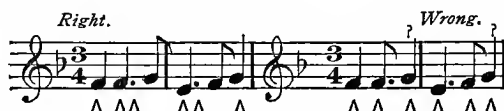
Teaching meter and rhythm

These steps carefully and accurately accomplished, little trouble will be met in following them with more difficult exercises. In the first grade no complex or troublesome rhythm should occur. Metrical exercises, not rhythmical ones, will suffice:—



With the introduction of meter the children should be taught to tap the meter very lightly on their desks. Let this be done with a free-arm movement with a good swing to it. The tapping of the meter is of vital importance. It should be taught before the notation of an exercise is shown. That is, in dictation all metrical exercises should be tapped by the children

till it is shown by the swing of the arm that they are actually feeling the rhythm of the meter. Do not confuse meter and rhythm. Rhythm is a regular, or irregular, division of the regular recurring accents, or pulses, indicated by a meter signature. Meter is a grouping of regular pulse into divisions called measures. Rhythm should never be tapped; for example (" ^ " indicates tap): —



These illustrations are merely suggestions. Many exercises of the same type are to be found in all music readers.

Individual singing

Individual singing should begin with the first day in school and be kept up till graduation. Concerted recitations have long since been abolished in other subjects and they should no longer be in absolute control of music. Music to be sure demands concerted efforts, but the individual effort must not be overlooked. So far as the writer knows the best plan devised for individual singing is that advocated by T. P. Giddings in his little book, *School Music Teaching*. Liberty is taken to quote from his article: —

Let the child in the rear seat and the one next in front in the same row stand. The first child sings a song or stanza. When he has finished, the next one takes it up instantly

without being told. As the first one finishes, the third one stands and is ready to sing when the second has finished. Having two standing at once saves the time it takes each one to stand and sit. They might, of course, remain seated, but they would lose a great deal of the good of the individual recitation.

This plan is effective and saves time. It can be used in note reading quite as readily as in rote singing. The passage read by each child is necessarily brief.

Standards of attainment for Grade I

The maximum demand on first-grade children is found in the *Harmonic Music Course*. This course requires the children to read music of equal grade of difficulty with "Old Hundred." This has been found to be absolutely practicable, successful, and not injurious to the child.

The minimum is where rote songs, and rote songs only, sung for the pleasure of singing monopolizes the entire music time. This is a great waste of time. There is no variety to such a course. The constant song singing cloy on the minds of the children. The longer note reading is put off the greater the number of obstacles that accumulate in its path. It must come and it should come early in the child's life.

In the first grade at least two thirds of the music period should be devoted to singing songs. But a narrow foothold, or base, in note reading is needed. This base is worth the effort as it greatly simplifies the requirements of the second year.

No detailed outline for the first grade is necessary in this article. All music readers have their own outlines. There are good points in most of them. Glean from them the things that will help you. The points common to all courses are the ones to be relied upon. Of radical features beware. The desideratum in the music period is singing. Swinging circles, clapping hands, marking dashes on the board, slamming doors, dropping pencils, and numerous other devices for quickening perception of sounds and rhythms are but consumers of time and have no appreciable value in music.

The writing or copying of notes in the first grade does but little good. Do a very, very small amount of it if you must, but only when the time can be spared from some other period than that devoted to music.

Analyzing songs, reducing them to phrases, picking out "motives," are fine to display the ability of the teacher. The results achieved will not justify the time expenditure.

Children learn to walk by trying to walk; to talk by trying to talk. Why not let them learn to sing by trying to sing; to read music by trying to read it?

Summary: —

Plan No. 1. Rote songs (100) for nine months.

Plan No. 2. Rote songs (80) for eight months.

Transition to reading.

Plan No. 3. Rote songs until voices are united (about one month).

Transition to reading.

From then on two thirds of time to rote singing.

Balance of time to note reading and other elements.

MUSIC COURSE — GRADE II

Beginning the year

As in Grade I seat the poorest singers in the front seats. If some monotones have passed in from the first grade or have entered from other schools, place these children in the foremost seats in each section.

For the benefit of newcomers in the grade and to freshen the memories of the other pupils spend about two weeks in song singing. Pay attention to tone quality and purity of intonation. When these requisites have been gained introduce note reading as is outlined for the first grade. After this has been begun a portion of the period each day should be devoted to note reading.

The use of music textbooks

The new feature to the children will be the placing in their hands of the music textbooks containing songs and exercises to be sung by note. Do not be afraid of exercises. They are as essential in music as are the phonetic drills in the teaching of the reading of English. Good exercises will do more toward cultivating a taste for music than songs. The highest forms in music are not vocal but instrumental. Peo-

ple who like vocal music exclusively generally form their opinion of the song through the poem. Of the music they think but little. Children are only "small people." If they prefer songs and can see no beauty in a good succession of tones, they are not having cultivated in them a taste for music. No less a personage than Richard Wagner has remarked concerning the effect of a great Parisian orchestra: "The orchestra had learned to look for Beethoven's melody in every bar — and the orchestra *sang* that melody. [This was the secret of their success." Music is music wherever found, either in a great orchestra or in a school-room. Search out the melody in each exercise and the dryness of the music will disappear. It is surprising how much melody can be found in a simple exercise.

When the book is placed in the hands of the children the tapping of the meter on the desk will be transferred to a pointing of the meter in the books. This pointing should be done noiselessly, but with a free movement of the hand and forearm. Success will depend largely upon the exactness of this pointing. A child to point to the right part of the measure must look at the right part of it. He may guess correctly once in a while, but cannot do it all the time. This simplifies matters for the teacher. At a glance he can tell where the attention of each is by watching the hands in a broad, wide-seeing glance. If a child is pointing to the right beat, or measure division, he is

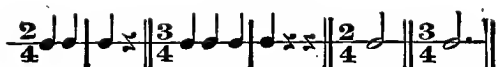
Point them out to the children. Occasionally let them try to draw the "G" clef and the several kinds of notes occurring in the songs and exercises they sing. Do all written work that is done on the blackboard.† C. H. Congdon (Chicago) has published some printed staves on which movable disks may be used in this grade in connection with dictation prescribed in some courses.

A small amount of "oral dictation" may be given. This consists of singing to a neutral syllable (*loo, la*), or playing a very simple series of tones. The children, first collectively and afterwards individually, sing the passage back to the teacher responding with the syllable names. The Congdon staves, mentioned in the foregoing paragraph, may then be used, the children placing the disks on the degrees representing the pitches sung.

Standards of attainment for Grade II

Rote singing should still occupy at least half the period, the songs being sung almost entirely for the pleasure they may give. Care should be taken that there is not too great contrast between the note and rote songs.

The material for this grade consists of rote songs, note songs, exercises in note reading, and dictation. The problem in rhythm being the beat note and multiple-beat note. (Each note a "beat" note. Multiple-beat note.)



In meter; $2/4$, $2/2$, $3/4$, $4/4$, $6/4$, $6/8$ are the measures used. All keys may be used, as a large key signature (five or six flats or sharps) presents no difficulty to any one who reads by the "movable *do*" system.

MUSIC COURSE — GRADE III

Beginning the year

By the time the children reach the third grade through the first and second there should be no trouble from monotones and "out of tunes." A few may not have been cured or new pupils with no music training may have started from other schools. Seat them as directed in the foregoing and continue the treatment begun in the lower grades. Try them out individually for a few seconds every day. Spend the first two weeks in review, both in reading and rote work. Continue to give at least half of the period to rote singing, using old and new songs. The remainder of the time should be allotted to reading songs, exercises, giving oral and written dictation and type rhythm drills.

Rhythm drills

This part of the work is not drudgery. It can be made very interesting if given with enthusiasm and vigor. Hollis E. Dann (Cornell University, Ithaca, New York) has worked out a very complete course in

dictation, both oral and written. His type forms in rhythm are also excellent.

The *Progressive Music Course (Teacher's Manual)* has treated this type-form phase of the work quite exhaustively. But little can be done at one time in this branch of music; yet, if done well, the results will be astonishingly satisfactory. The technical side of music should not be neglected. Piano teachers have recognized this for years. Only those who do stress this part of the teaching of music get lasting results. Technical development is just as necessary in music as in mathematics. There is much greater resemblance in the teaching of mathematics and music than there is between the teaching of language and music.

The new feature in rhythm will be the evenly divided beat; two, three, or four notes of equal lengths being sung to one point. Children have little or no difficulty with these rhythms. It is really a cause for speculation why the two-note division is not used in the second grade.

Optional work

Two-part singing (first and second soprano) may be attempted in the latter part of the year. It is not at all important, however, and can just as well be omitted. "Rounds" are easy to sing, but have so little musical value that they too may be left out.

Folk-dancing may and should be correlated with music. Alys E. Bentley has suggested and outlined

many little dances in connection with singing. The *Progressive Music Series* and the *Hollis E. Dann Course* are both rich in suggestion and material, and will be of inestimable value to the teacher. The only danger lies in these auxiliaries being carried to the extreme of monopolizing the music period, everything else being crowded out.

MUSIC COURSE — GRADE IV

New work

A beginning is made in the fourth grade of teaching the theory of music. This should be done as an aid to reading and interpreting music. Teach nothing till it is to be used. Meter, words, etc., should be explained and called for only when they are needed in interpretation. Constant application of their meaning soon makes them understood. Once understood they will never be forgotten. Written lessons should not exceed one minute a day — not over five minutes a week. Written work is a good check to find what each child knows. This is its strongest recommendation. Do not spend time *hunting* for “budding genius.” It will crop out of its own accord. It cannot be held down.

The new problem in rhythm is the unevenly divided beat. This “bugaboo” is not to be feared if it is treated in a common-sense manner and if little drills on it are given from time to time. In the case of

position. (Naturals are sometimes "flats" in effect, sometimes "sharps." They always subtract either sharp or flat.) A thorough understanding of this requires considerable study for one who has not been accustomed to the "movable *do*" system. The subject is so gradually, simply, and explicitly treated in several music courses that to go into it here is not necessary. The *Harmonic Music Course* is probably the most thorough of all in developing this ability. By studying the *Chart Manual* of this course a mastery of the whole plan may be gained.

Attainment in Grade IV

Fourth-grade results should be a decided pleasure, musically, to the teacher. The voices should be beautiful in quality and perfect in intonation. Two-part songs and exercises may be introduced safely in the early part of the year. Be careful that the range of the lower part does not go far below the staff. Use nothing that requires sustained tone below middle "C" (first line below treble staff). An occasional "B" or "B flat" will not be injurious. The upper part should not go above the fifth line of the staff.

MUSIC COURSE — GRADE V

Nothing absolutely new is left for the fifth grade. The minor scale is often advanced for particular study. This mode has been used in songs and exercises so often in the preceding grades that it is already familiar.

The tone combinations are familiar to the ear. Even the step of the augmented second (interval of one whole and one half step represented by adjacent staff degrees, as "F" to "G sharp") is only a minor third as expressed by "F" to "a flat in the key of E flat." If the minor scale is required as a specified study, teach it first by rote just as you did the major key. Two- or three-voiced (part) songs should be sung in abundance. Tone quality should be particularly emphasized. As a usual thing no changed voices yet present themselves and the unchanged voices are in their prime.

Written lessons of about the same length as in the fourth grade should be given. Written and oral dictation should be done very rapidly and should take but very little time.

Individual singing must be persisted in. Follow the same plan of standing and sitting as in the previous grades. In duet and trio numbers four or six, as the case demands, will be standing at one time. Thus no time will be lost in having the children rise and sit. Also each child will be heard two or three times as often as where solo singing is done. Self-consciousness, not having developed to any extent as yet, will not hinder even a fifth-grade pupil from responding readily in this work. In case the class is a beginning one, exercises and songs should be easy and all the steps outlined for first-grade children should be taken. The only difference is that the songs used should be suitable for fifth-grade children.

MUSIC COURSE — GRADE VI

There is much beautiful music for female voices (unchanged voices) that is available for use in the sixth grade. It is an ideal situation when the pupils of this grade are so well trained in reading music that the usual music readers can be discarded in favor of some of these larger compositions. Then the regular textbook will be used only enough to insure a regular sequence of music ideas, theory, etc. All the minutiae of the technic of reading should have been mastered before this grade is reached.

Material

If possible have a different set of textbooks in each sixth-grade room so that by an interchange of books a larger variety of material may be available. By all means secure several cantatas for use during the year, such as "The Crowning of the Gypsy Queen," by Surdo; "Snow-White," by Frederic Root (bass parts written but not absolutely necessary); "Feast of the Little Lanterns," by Bliss; "Pan on a Summer Day," by Bliss; "Three Springs," by Bliss; "Cinderella," by Abt; "King René's Daughter," by Smart (rather difficult); and "The Lady of Shalott," by Bendell. It is not meant that all of these should be used in one year. Select the one that would be best adapted to the ability of the children. Any music publishing house can furnish these.

Where changed voices are present

Where some of the boys' voices have changed, the results cannot be entirely satisfactory, but this should not hold the others back. Music is in the schools for educational purposes, not for exhibition. "Snow-White" would be entirely satisfactory even under these conditions.

Importance of tone quality

Never for an instant let up on tone quality. There must be no striving for "big" tones. Pure, sweet, round voice is what is wanted. Be satisfied with nothing inferior.

MUSIC COURSE — GRADES VII AND VIII

Reading ability should be at its height in these grades. Trouble from the changed voice among the boys will not be serious if the voices have been well used up to this time. The basses have fairly good control in limited range. Select music that has a bass part, simple in rhythm and interval, in the range of the lowest voices. Unison songs are not effective on account of the few tones possessed by these adolescent voices. More boys lose interest at this time than at any other if material is not selected that they can sing.

Girls, whose voices are also in this transition state, should be shifted from day to day to the part that is of easiest range for them. Be particular in this, for the

change, although not so perceptible, is more dangerous than with the boys.

The teacher should study voice

The teacher should make a study of the adolescent voice whether he teaches music or not. There is no subject more important, more vital than this. The voice as an index of physical development is a great help to him who understands its production. It is also an index to the habits that boys and girls are forming. A strident quality or peculiar hardness and lack of resonance is a sure indication of pernicious habits. There are no signs or symptoms of this period more reliable than the condition of the voice and eye. Learn to read both.

Four-part singing

Four-part singing is not only desirable, but necessary. Low alto voices can be substituted for tenors, if tenors are lacking. The tenor part will be found the best for boys just before the break occurs in the voice, and occasionally just before the change.

Harmony and appreciation

The introduction of the study of harmony in any form at this time is questionable. Most of the children will never need it. If they understand the theory of music through the use of the signs and symbols, that is sufficient.

Appreciation of music, as a course of study, is also out of place in the seventh and eighth grades. Such courses may be introduced at special times when there is going to be an opportunity to hear some good orchestra, pianist, or other artist. At such a time explanations of the pieces to be heard will make the concert more interesting. But to take any time away from the regular period is not well. There is seldom time enough allotted to music to do what is already required.

Band and orchestra organizations are discussed in another part of this chapter.

COMBINATION GRADES

Sight-reading

Considerable space has been taken to indicate the work of the school, grade by grade. To teach successfully in rooms where there are classes of different years the teacher should know what should be covered in each grade when it is taught alone. From this graded course one that embraces the necessary things, the chief steps, may be compiled, eliminating from the assignments in the lower grades those parts that will of necessity be often repeated throughout the years of school life.

The most satisfactory combinations for sight-reading are the same as those given for rote singing. The combinations of grades that bring together changed and unchanged voices are always undesirable, as is

also a combination of grades three and four, because the lower of these grades does not study the theory of music, while the upper one does.

A combination of the first two grades, rather than being detrimental, is a help. All the steps prescribed for the first grade must be gone through with, but more hurriedly than where the grade is by itself. Monotones will cause but little trouble, the majority of voices being in tune and having strength enough to penetrate the consciousness of the deficient. Each step of progress in the second grade need not be so thoroughly accomplished as where the grades are separate. As the first-grade children will necessarily do all the fundamentals twice and the second-grade pupils will go on to the third grade tolerably well prepared, aim to complete the upper-grade requirements, giving the greater amount of time to the upper grade. Make your plan so that all the steps of development will be covered each year. Vary the material, if possible, by using one textbook one year and another the next. By alternating the two books the same fundamentals will be passed over twice without repeating the exercises or songs.

Follow this same plan with all combinations. Classes embracing four grades are less desirable, but can give very satisfactory results if they are taught according to this plan. The same textbook should not be used two years in succession if it is possible to avoid it.

THE UNGRADED ONE-ROOM RURAL SCHOOL

Eight grades in one room, taught by one teacher, is the situation met with in many rural schools. All that has been mentioned above as to advantages and disadvantages of combination grades holds good in these conditions. The problem for the teacher is a complicated one, but it has been met successfully by hundreds of teachers. Country children are better matured, more responsive, and more willing to help each other than are city children. These are the factors in the problem that make possible good results in rural schools. There are no books published, so far as the writer has been able to discover, that are written especially for such schools.

To meet these conditions select a book that contains many, many songs of all types. One that is particularly rich in material is the *School Song Book*, published by C. C. Birchard & Company, Boston, Massachusetts. It was not intended for rural schools, but its variety of songs is so great that suitable material for any occasion can be found in it. The only supplementing it will need will be in songs for little children.

Sight-reading can best be carried on, under these conditions, from chart or board. But little reading need be done in a year, particularly the first year. The charts of the *Harmonic Music Course* (American Book Company) and the old charts to the *New Educational Music Course* (Ginn & Company) furnish all the

material that could be wished for. These are possible, financially, as the cost of the reduced chart manual of either is not over fifty cents.

Reverse the plan for combination grades (at first) for doing sight-reading. It is next to impossible to do much reading the first or introductory year with the older children. Place most of the effort in getting the youngest pupils started right. This effort should not be apparent to the older ones. Have the whole school do thoroughly the chart intended for the first grade. The *Harmonic Music Course*, "Chart A," is especially suited to this, as it has no words and commands the respect of any person who is beginning in music.

The child in the country is likely to be in the same school for a number of years. He will, of necessity, go over the same steps a great number of times. By the time he has gone through all the grades in the room, he should be more expert in reading than a child who is in a different room, under a new teacher, each successive year. A music course carried out systematically in such a school is ideal in its possibilities.

A change of sight-reading material should be made each year. If this is not done the reading will not be reading, but rote. Two sets of charts will be sufficient to effect the desired variation in material. Alternate them from year to year.

In a few years the condition will reverse itself, that is, about the time the original first-grade pupils reach

the fourth or fifth grade. Then the plan of stressing the upper-grade requirements in reading can be put into effect.

To show the pupils the advantage of interval and rhythmic study always preface the teaching of a new song by a study from the chart of any difficulties that are to occur in the song. Supposed difficulties are presented in such a simple way in the *Harmonic Music Charts*, that, when gone over once or twice as directed, all complexities vanish. After singing the song (or exercise) in the book call attention to the way the chart bridged over what would have been a difficult spot. It will be well to let the children frequently encounter passages that they, at first sight, cannot sing. Then lay aside the book and turn to the chart or board and work out by simplified steps the interval or rhythm that has "stumped" the class. When the class stumbles, drop the song at once; otherwise the children will become afraid of that particular place and will always hesitate on reaching it. Overcome the difficulty by board or chart work and then come back to the book. Do not tell the children why you do this. They will eventually see for themselves. It is better, however, for the teacher to study his lesson enough in advance to know where the troublesome places are, in order to prepare the class by board or chart simplifications. In this way he will save them from making mistakes.

The first efforts at reading from the books may be

accompanied by an instrument, if there is one at hand. After the children have learned to read fairly well, let them attempt the reading of new songs before hearing the instrument or singing the song for them. Teach independence as much as possible. Help the children only when you wish to prevent mistakes.

Individual singing may be done through duets, trios, quartets, etc. Encourage the pupils to attempt these part songs with one voice on a part. Help them outside of school hours and then use the songs as a special feature in the music period. One or two groups of this kind will stimulate the whole school. Individual effort will then come of itself without begging, coaxing, or threatening.

A typical example

Mrs. Marie Turner Harvey in her rural demonstration school, the Porter School, near Kirksville, Missouri, has secured some excellent results in music. A good, dry, clean basement that had been put under the building was utilized in various ways. It made an extra classroom for small groups of children. While the teacher was hearing a recitation in the main room, one of the older girls would take the younger children downstairs and teach them music suitable to their ages. This saved much time for the upper grades, it was a source of delight to the little ones, and it gave valuable training to some of the more mature pupils.

The school also had a male chorus. This was really

a community affair. It met twice a month under a special director who volunteered his services. Fathers and sons alike were in this chorus. The old familiar songs were first used. Gradually more difficult numbers were introduced until the chorus was singing from standard works of the best composers. The interest of the fathers had an excellent effect on the boys in the school. The boys wanted to be with the older men. It was an incentive to them. The influence was retroactive on the men. They did not wish to be surpassed by the boys, so all sang with greater enthusiasm.

With the assistance of a band-master, who also volunteered and donated his services, a band was organized. The band met twice a month, alternating with the chorus. The band grew proficient rapidly. It has since been recognized by the United States Government in the substantial form of a complete set of band instruments.

A teacher was engaged to make regular visits on certain days to give individual lessons on the piano. The schoolroom and school piano were placed at her disposal. She had a large class that included mothers and grandmothers. The pupils' recital at the end of the year was one of the most remarkable the writer ever heard. To see the effort of many of those aged, gnarled hands to finger the keys was extremely touching. The patience, the perseverance of those older people spoke volumes for their love of music.

All of this was done, at first, with the opposition of

almost exactly one half of the voting strength of the community. But merit won, and now the boys and girls of the Porter School District are getting all the advantages possessed by city children, and more.

What Mrs. Harvey has done others can do, if they possess ability, pluck, tact, and energy.

Use the best music

Do not think that inferior music will do for country people. It may be necessary to start with music of a rather simple class, but the response to good music is quicker than in the city. The phonograph can be a wonderful assistant. Many farmers own fine instruments. They only need to be led to buy good records. The very fact that they are far removed from the centers where great musical productions may be heard makes them appreciate all the more keenly what is brought to them. Choruses from the standard light, grand, and comic operas and oratorios are the ones to use. These compositions have an element in them that is common to all human nature. If this were not true they could not have lived. The music written for school purposes is, as a rule, shoddy. Drop all of it. Begin with folk-songs and lead up to the heavier works. Talk but little. Do not "gush" at all over the supernatural, ethereal attributes of music. Good music needs no explaining, other than how it occurs in opera or oratorio. Make even these statements very brief.

MUSIC COURSE IN RURAL SCHOOLS

Seating plan: The same as that given for city schools.

Rote singing: Unite and tune the voices through rote songs. Folk-songs are always the best for this purpose. At first enlist the aid of the older pupils in teaching the younger ones.

Reading music: Use for the first lessons the reading exercises intended for the first grade. As there are no words the older pupils will not realize that they are doing first-grade work.

Teach the syllable names through either song or exercise.

Try exercises by note from the staff, using either chart or board.

Attempt easy, unknown songs from the book with an accompanying instrument if possible.

Teach all difficult passages in new songs from board or chart.

Sing new songs by syllables.

Increase difficulty of songs from day to day.

After several years set the standards from what the upper-grade pupils should do. Bring the younger ones along with the older ones by rote, but have as many songs for the little folks as time will permit.

See the section "Combination Grades."

MUSIC APPRECIATION

Music appreciation is important if too much is not made of it. Do not try to do more than one period per week in this. Once a month would be better. The Matthews book (*How to Understand Music*, 2 vols.) is an excellent basis for this study. As this writer presents it, it amounts to a study of "Form," and is very helpful. The phonograph companies have also published some very good books for this work,

but to accomplish all they give would take too much time from the regular course in music.

Children should be encouraged to attend good concerts. In a small city and in the country such opportunities are rare. When they are to occur the teacher should secure the player and phonograph records of the selections that are on the program, and play and explain them. Point out construction as to form, motive, etc. Tell the story of the opera from which an aria is taken. Give the setting of the aria in the opera. This will be a real aid in appreciation of music.

Musical biographies are also quite interesting. Almost all of the lives of the great composers bear a charm for little folks, for most of the composers rose from low rank in life by hard work. When telling the stories to the children (or adults) do not paint the characters other than they were. Remember they were mortals with all the failings and shortcomings of mortals. In truth many had more failings than virtues, but only touch this point to show how, in spite of these shortcomings, they achieved greatness. Do not be too quick to condemn one of them either, because in their day an entirely different set of social standards governed from those that we recognize.

Other means of promoting appreciation will be found in the article about the Porter School in this chapter, but after all the best road to musical appreciation is singing good music.

BANDS AND ORCHESTRAS

The broadest movement in public school music to-day is the instrumental one. A school, to be up to date, should have an orchestra, but by this is not meant a group of guitar and mandoline players. Some good teachers of the town or neighborhood should be interested to give lessons to groups of children for a nominal fee. Arrange to allow the use of the school building, or some rooms in it, for this purpose. These lessons will be given outside the school hours, for cornet classes in particular do not "harmonize" well with the regular school work.

Band and orchestra development is at its best in Oakland, California. Mr. Glenn Woods will be very willing to give the details of his organizations.

PREPARATION OF THE TEACHER (SELF-STUDY)

There is no other subject more adaptable to self-instruction than music. With a little assistance to get started wonderful progress can be made with no other instruction than that to be had by reading about music, by trying to produce music vocally or instrumentally, and by hearing music. The phonograph and player piano place within reach of all the grandest music the world has produced. The technical side of music — i.e., theory, harmony, counterpoint, etc. — is easily mastered through textbooks. Of course the way is much shorter and easier under the guidance

of a teacher, but much can be done by the student for and by himself.

One of the best works for the supervisor, or teacher, of music to possess is W. S. B. Matthews's *How to Understand Music* (2 vols.). In this will be found a combination of all the subjects needed for self-study with the names and analyses of illustrative works, and a description of the different periods in the history of music. Enough of the selections called for are procurable for the player piano and phonographs to make possible a most excellent course of study to give general musicianship and appreciation.

To prepare yourself in sight-reading secure any of the sets of books published for public school use and sing through them from beginning to end. Study each step. If it helps you it will help your pupils afterward. In this way you improve yourself and at the same time get many ideas for presenting the subject effectively. After the actual sight-reading material of the first four grades has been mastered, the task of the teacher-student is easy. The old *Natural Music Course* and its chart manual are the best for this work. In these books each step is carefully developed. The series lacks in song material, so has been succeeded by the *Harmonic Music Course*. But for the prospective teacher, who wishes self-improvement, the former cannot be surpassed.

Given a general knowledge of the subject and an understanding of just what is to be done, the teacher

can prepare the lessons from day to day in advance of his class. In a short time he will find it no trouble at all to keep ahead of his class.

Good singers and pianists are generally poor teachers in the schoolroom. They almost always are inclined to take too much of the time in displaying their own abilities. They do too much singing or playing with the children, and in this way interfere with their natural growth in independence. If you have a good voice, save it. If you play the piano well, use your art sparingly, when it will really help and not hinder your pupils.

COMMUNITY GATHERINGS

Community gatherings are most needed in the country. The "getting together" of the first company is the hardest part of the job. After one good meeting the rest is easy.

The first meeting

Be sure to have plenty of good songs that the people can sing. *Let them sing*; do not try to make them sing and do not sing at them.

Almost every one knows "My Old Kentucky Home." It will be a good opening number. Waste no time in preliminaries. Get to singing at once. If this song is not familiar, use another that is. Do not be particular about the way the first song is sung. Keep at it by jest and encouragement till all are sing-

ing. When this is accomplished, drop this selection and start a new one. Take a hymn for the second number. "How Gentle God's Commands" is generally known. It is also very easy. The hymn singing will enlist some who at first will care for no other kind. Do not make the mistake of encouraging the expression of likes and dislikes. This will breed a lot of trouble. Some would sing only the things they liked, others would do the same with their favorites till there would always be a divided house.

After singing one or two familiar melodies let the same be played on the machine, if the gathering is small. Call attention to the good points in the voices or style produced by the record. Immediately let the chorus try to imitate the quality and style just heard.

Next, take up an entirely new song of widely contrasting style. "Gypsy John," by Clay, is a good one. It is of easy range, has a lively, whole-souled melody, and words that will please old and young. If you cannot sing it for them, play it on the piano or on the machine. Then let the chorus try. Quite promptly change to another new song of different character. "Song of the Zuyder Zee," by Jules Jordan, would be fitting. As this song occurs in the opera "Rip Van Winkle," tell just enough of the action to show how it is introduced. Sing it and then let the others try. Get these numbers (or other similar ones) only fairly well started. Close the evening with any very, very

familiar song or hymn. Make the first meeting brief. Leave a desire for more in the minds of the singers.

In the first meeting pay no attention to the seating of the different parts (voices). Do nothing but sing. Adjust all other matters, such as placing together of the sopranos, altos, tenors, basses, and monotones, at later meetings. Eventually use the same seating plan as in the schoolroom. Great tact will be needed in doing this. Don't hurt any one's feelings if it is possible to avoid it.

After the first meeting

Many problems in voice production, ear training, etc., are encountered in these meetings. They should be handled in the same manner as in the schoolroom, but with greater tact. Of course these things cannot be done so openly as in the school, but they must be done. For example, songs should be sung that give special opportunities for correcting monotones. Tone quality may be improved by the use of the phonograph, having the assembly try to imitate (in *ensemble* numbers) the artists' tone quality and phrasing as heard in the machine.

Vary the program from meeting to meeting. Use the talking machine just enough to cause a desire to hear more, but the machine will not be found effective in large gatherings.

The meetings should not last more than one and one half hours. Several times during the year give a con-

cert to attract those not already interested. Help those who are to take part before or after regular meetings.

In the country the county superintendent can be of the greatest assistance in organizing these meetings. Through him every part of the county may be reached. His influence on the teachers will bring a better response from them. The telephone is also a handy way of inviting people to the meetings and notifying them of any change in time or place of meeting.

Songs that all can sing

- "Old Kentucky Home."
- "How Gentle God's Commands."
- "Gypsy John," by Clay.
- "Song of the Zuyder Zee," by Jordan.
- "Old Folks at Home."
- "Old Guard," by Rodney.
- "Blow, ye Winds, Heigh-ho."
- "Massa's in de Cold, Cold Ground."
- "Brigand's Love Song," by Petrie.
- "Ave Maria," by Mascagni (for tone quality), "Inter-mezzo."
- "Who is Sylvia?" (tone quality).
- "Monotone," by Cornelius (for sustained pitch).
- "Hark, Hark, the Lark," by Schubert.
- "Blow, Blow, Thou Winter Wind," by Sarjeant.
- "My Own United States," by Julian Edwards.
- "Star-Spangled Banner."
- "Sumer is Icumen in," old English ballad.
- "Should Auld Acquaintance be Forgot."
- "Noel," by Adams (Christmas).
- "Hark, the Herald Angels Sing."
- "Once Unto the Shepherds," by Jessie L. Gaynor.

"Joy to the World."

"O Little Town of Bethlehem," by Redner.

"Dear Santa Claus," by Jessie L. Gaynor.

"O Come, All Ye Faithful."

"Jolly Old Saint Nicholas," published by Baldwin & Company.

"Old Santa Claus," in *101 Songs*.

"Silent Night, Holy Night."

"In the Gloaming."

"How Can I Leave Thee?"

"Alice, Where Art Thou " (two voices).

"Three Blind Mice " (round).

"Row, Row, Row Your Boat " (round).

"Softly Now the Light of Day."

All of these songs, except those with composer's, publisher's, or edition name after them, are found in *The School Song Book*, published by C. C. Birchard & Company, Boston, Massachusetts.

COLLATERAL READINGS

1. *On the voice and voice training* : —
 - a. *The Child Voice in Singing*. F. E. Howard.
 - b. *The Art of Breathing*. Kofler.
 - c. *Voice Placing and Tone Production*. H. H. Curtis.
2. *On teaching music* : —
 - a. *On Musical Education*. Bach.
 - b. *School Music Teaching*. T. P. Giddings.
 - c. *Harmony Simplified*. S. H. Shepard.
3. *On appreciation* : —
 - a. *How to Understand Music* (2 vols.). Matthews.
 - b. *What to Hear in Music*. Faulkner.
 - c. *The Orchestra and Orchestra Music*. Henderson.
4. *On biography and history* : —
 - a. *First Lessons in Music Biography*. Thomas Topper.
 - b. *Lessons in Musical History*. Fillmore.
5. *Standard music courses* : —
 - a. *Music Course*. Hollis E. Dunn.
 - b. *Harmonic Music Course*. Ripley and Topper.

- c. New Educational Music Course.*
 - d. Progressive Music Series.*
- 6. *Rote songs : —*
 - a. Congdon Primers.*
 - b. Primers. Alys E. Bentley.*
 - c. Primer to Eleanor Smith Music Course.*
 - d. Songs of the Child World. Jessie L. Gaynor.*
- 7. *General song books : —*
 - a. School Song Book. McConathy.*
 - b. 101 Best Songs. Cable Piano Company.*

CHAPTER III

PHYSICAL EDUCATION AND PLAY

The modern need of physical education

THE legislatures of the different States of the Union are enacting laws that put upon the schools the responsibility of providing adequate physical education, to the end that the children of our land may become physically fit now and that they may enter manhood and womanhood physically fit.

These laws express the popular will that the children of the Nation shall be so trained that physical vigor shall be a support for their intellectual life, their spiritual life, their industrial life, and last, but by no means least, for their civic and patriotic life.

He whose blood is red, whose muscles are hard, whose sleep is sound, whose digestion is good, whose posture is erect, whose step is elastic, whose endurance is lasting, and whose nerves are steady, has just so many resources in life. Physical vigor and soundness contribute to happiness, to accomplishment, to service to society, state, and country. A new and a real gospel of health is being preached and increasingly practiced, a gospel in which there is a transfer of emphasis from the cure of disease to its prevention.

Conditions of life to-day have not been without

influence upon our attitude toward keeping physically fit. Congestion of people in cities, the competition of business life, the inventions for saving time, which have "so strangely filched leisure from us," the nervous strain and tension of American life, are among these conditions. Men and women are beginning to see that exercise, rest, and recreation are necessary if they are to do their part in the world.

Surveys of the occupation of children during out-of-school hours have been made in Milwaukee, Toledo, Providence, St. Louis, Detroit, Ipswich, and Cleveland. They show that about half the children who were observed, 23,549 in all, were loafing. These and other surveys made in rural communities show that children do not know how to play. They do not know the games familiar to children of the past and they have not invented new ones.

If these surveys are indicative of the general situation, it is evident that children to-day are not having anywhere near the amount of physical activity that children had a hundred years ago and that they are having much less than they need.

Now that the need for physical education is generally recognized, it becomes the duty of those responsible for education to set themselves vigorously and intelligently to meeting it. To such responsible authorities comes the question, "What kind of physical education shall we provide?"

The answer is, "It must be simple enough to be

directed by the teachers now in service, and it must be planned from the viewpoint of the children's abilities and interests." With these two considerations in mind the following program is suggested.

First a word regarding

The nature of children

The normal life of children is one of physical activity in the open air. Their natural playground is the forest and the field with the streams and lakes in which to fish and swim. Gardens and woodsheds are the proper places for more serious exercise, while caring for domestic animals and pets and sharing the daily work of the family by doing "chores" is physical, mental, and social training of a high order.

The human race has been developed by fighting, hunting, fishing, tilling the soil, caring for animals, and engaging in those activities that pertain to establishing and maintaining families. Children have received in former times their physical, mental, and special training by participating in these primitive activities. But the changed conditions of life, brought about by civilization, have taken from them the incentive and even the opportunities for such activities. To make up for this loss physical education has come into existence.

The modern problem

Our problem, then, is to lead into adequate activity children who live in an environment not conducive to

activity, who are not getting enough for proper growth and development, and who must spend a large part of their waking hours in school. We must so lead these children into activity that habits of exercise will be established; habits that will persist into adult life, for activity is not a thing which can be "stored up" for future use.

This is not so technical a problem as we have been led to believe, and it is not at all beyond the ability of the average teacher to solve. The present plan of using graded exercises of the German or Swedish system for fifteen or twenty minutes per day, while better than nothing, is accomplishing only meager results, and it is questionable whether or not it justifies the expenditure made in carrying it out.

Doubtless our mistake has been in trying to transplant foreign systems with which we are not at all "in tune." Formal work is necessary in the correction of deformities and it is of some value, if graded properly, in neutralizing the effects of unsatisfactory conditions of life; but to promote adequate physical activity the play instincts must be utilized. It is becoming evident that in America this is the only successful method of approach, and that the average teacher can stimulate greatly the physical, mental, and moral development of the boys and girls in this country by promoting a scheme of activity based on children's primitive instincts. To carry out such a scheme the teacher needs little technical training.

Time available for physical education

When any new school subject is proposed, there always arises the question, "Is there time?" The apparent lack of time is usually a stumbling-block to progress. But lack of time is not a serious hindrance to proper physical education, for it can be overcome by utilizing spare moments. There are, first, fifteen minutes per day usually set aside for physical training; second, one or two recesses of fifteen minutes each; third, the long noontime, usually one and one half hours; fourth, there is the time after school in the evenings and on Saturdays; fifth, the long summer vacation. Adding all this time together gives us a greater time total than that spent by the child in school.

In view of the great importance of systematic physical exercise the school day may properly be lengthened a half-hour for all schools having less than a five-and-one-half-hour day. Where this has been done and the additional time has been given to really vigorous activity in the open air, pupils and teachers testify that the lengthened school day has not been an additional burden.

How can the time be used?

Absolute control is exercised over the fifteen minutes per day set aside for physical training. This time should be used chiefly to counteract the effects of sit-

ting still and to secure correct posture. If only fifteen minutes are available it should be divided into at least four periods of three to four minutes each, which will, with the recesses, break up the morning and afternoon sessions sufficiently.

For these periods carefully arranged lessons have been published with exercises graded in complexity and severity of movement. While there is some merit in using carefully graded lessons, which any teacher can get from such books as Dr. Bancroft's *Free Hand Gymnastics for Elementary Schools* or Miss Clark's *Physical Training for Elementary Schools*, the main advantage can be gained if nothing more than ordinary stretching, bending, squatting, stationary running, and deep breathing be indulged in. What the teacher is really trying to do is to stimulate circulation and respiration and to dissipate accumulation of blood that has become stagnant in the abdominal region.

To secure these results the pupils must have muscular activity to the extent that they breathe hard, but without perspiring. While an attempt is often made to have an extended series of formal exercises in these short periods, ninety-five per cent of the possible value comes from muscular work regardless of the kind. An active indoors game is better than formal gymnastics, and an out-of-doors game is better still. During all indoors exercises have windows open. *Never give exercises indoors when they can be given in the open air.*

Posture

Good posture is not so much a matter of muscles as it is a matter of mind. Children should be stimulated to want to stand and sit in good positions; their interest must be aroused. A most powerful incentive is the teacher's good example. Another incentive is the "posture test." If this is applied once each month and pupils are graded by it, a wholesome competition in good posture will be started that will bring excellent results.

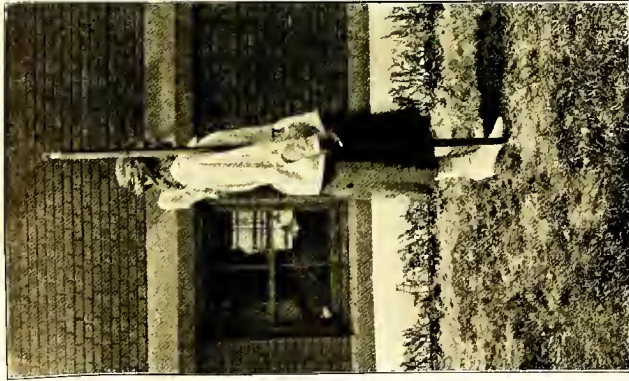
The "posture test" is applied as follows: A long straight stick (a window stick will do) is placed vertically beside a pupil so that the top of the stick touches the front part of the ear and the lower end touches the floor at the middle of the ball of the foot. If the pupil is standing properly the long axis of the head, neck, and trunk will form a straight line.

GAMES AND EXERCISES

It is obvious that it is impossible here to do more than give general suggestions for exercises and games. Teachers are referred to available sources for full descriptions of those that are here proposed as examples of desirable types suitable for the different grades:—

Games for Grades I and II

1. *Singing and dancing games:*—
 - a. Farmer in the Dell.
 - b. Mulberry Bush.



THE TEST FOR CORRECT STANDING
POSTURE



CORRECT SITTING POSTURE



POSITION FOR THE START OF A
BROAD STANDING JUMP



**TWO CORRECT STARTING POSITIONS FOR THE
RUNNING RACE**

The girl and the boy at the rear are bracing the feet of the runners
with their own



**CORRECT POSITION FOR BASKET-BALL THROW
FOR DISTANCE**



CORRECT WAY TO CHIN THE BAR

- c. London Bridge.
- d. Looby Loo.
- e. Go Round and Round the Village.
- 2. *Games of imitation:* —
 - a. *Trees:* —
 - 1. Tall straight trees (hands up-stretch).
 - 2. Wind in trees (breathing in and out).
 - 3. Leaves falling (wiggle fingers and arms side down).
 - 4. Tree swaying and twisting in wind (body swaying and twisting).
 - 5. Trees bending before the wind (body bending).
 - 6. Bringing up leaves for bonfire (each row picks up leaves and runs around room and back to seats).
 - b. House-cleaning (house-cleaning activities).
 - c. Raking up leaves.
- 3. *Running games:* —
 - a. Cat and Mice.
 - b. Slap-Jack.
 - c. Squirrel in Trees.
 - d. Changing Seats.
 - e. Circle Seat Relay.
- 4. *Dances:* —
 - a. The Shoemaker.
 - b. Baa-Baa, Black Sheep.
 - c. I See You.

Grade III

(*Monitors open windows*) ¹

- 1. Class stand.
- 2. Upward stretch (real stretch); four counts up; four counts down.
- 3. March forward four counts, mark time four counts, march forward four counts, half-turn left. Repeat.

¹ Even in cold weather these exercises should be given out-of-doors, if the condition of the ground is suitable.

4. Position. Raise arms forward upward — 1. Lower side-ward downward — 2.
5. Hands on hips. Bend trunk sideward left — 1. Return — 2. Same right — 3-4.
6. Hands on shoulders. Inhale and extend arms sideward — 1. Exhale — 2-8.
7. Hands on hips. Bend knees full — 1. Return — 2.
8. Stride stand, hands on shoulders. Turn trunk left — 1. Return — 2. Same right — 3-4.
9. Hands on shoulders. Raise left knee forward and extend arms (slowly) — 1. Return — 2. Same right — 3-4.
10. Breathing as in No. 6.

Games: —

Tag the Wall Relay.

Schoolroom Tag.

I say "Stoop."

Have You Seen My Sheep?

Dances: —

Indian Dance.

Bleking.

Grade IV

(Monitors open windows) ¹

1. Class stand.
2. Stretching (up or side).
3. Form columns of fours. Quarter wheel left, four counts. Repeat.
4. Bend arms outward. Extend arms sideward — 1. Return — 2. Same upward — 3. Return — 4.
5. Hands on hips. Bend head and trunk backward — 1. Return — 2.
6. Arms forward. Inhale and swing arms upward side-ward — 1. Exhale — 2-8.
7. Bend arms outward. Bend knees half and extend arms sideward — 1. Return — 2. Same with arms upward — 3. Return — 4.
8. Position. Bend elbows backward — 1. Bend trunk

¹ Even in cold weather these exercises should be given out-of-doors, if the condition of the ground is suitable.

- forward and extend arms downward — 2. Return — 3-4.
9. Arms forward. Raise left leg backward and arms forward (slowly) — 1. Return — 2. Same right — 3-4.
10. Breathing as in No. 6.

HEAD UP!

CHIN IN!

Games: —

Dances: —

All-up Relay.

Hansel and Gretel.

Arch-Ball.

Dutch Couples.

Vaulting Seats.

Grade V

(Monitors open windows)¹

1. Class stand.
2. Stretching (up or side).
3. Column of fours. March forward three steps, quarter wheel left. Repeat three times.
4. Arms forward. Swing arms upward sideward — 1. Return — 2.
5. Step forward left, hands on hips. Bend head and trunk backward — 1. Return — 2.
6. Position. Inhale and swing arms forward upward sideward — 1. Exhale — 2.
7. Position. Charge sideward left and raise arms sideward — 1. Return — 2. Same right — 3-4.
8. Hands on hips. Charge forward left — 1. Bend trunk forward — 2. Return — 3-4. Same right — 5-8.
9. Hands on hips. Bend trunk sideward left and raise right leg sideward (slowly) — 1. Return — 2. Same right — 3-4.
10. Breathing as in No. 6.

HEAD UP!

CHIN IN!

Games: —

Dances: —

Blackboard Relay.

Clap Dance.

Going to Jerusalem.

Pop Goes the Weasel.

Schoolroom Dodgeball.

¹ Even in cold weather these exercises should be given out-of-doors, if the condition of the ground is suitable.

*Grade VI**(Monitors open windows)*¹

1. Class stand.
2. Stretching.
3. Column of fours. Mark time four counts, half wheel left, half turn left. Repeat with half wheel right and half turn right.
4. Stride stand, arms forward. Bend left knee and raise left arm upward — 1. Return — 2. Same right — 3-4.
5. Bend arms outward. Bend trunk backward and extend arms sideward obliquely upward — 1. Return — 2.
6. Elbows backward. Inhale, extend arms forward and raise upward — 1. Exhale — 2-8.
7. Position. Charge sideward left and raise arms sideward upward — 1. Return — 2. Same right — 3-4.
8. Stride stand, arms upward. Turn trunk left and lower arms sideward. Return — 2. Same right — 3-4.
9. Hands behind head. Bend trunk sideward left and raise right leg sideward (slowly) — 1. Return — 2. Same right — 3-4.
10. Breathing as in No. 6.

HEAD UP!**CHIN IN!***Games:* —*Dances:* —

Desk Relay.

All of Diamonds.

Round Ball.

Lottie is Dead.

Vaulting Relay.

*Grade VII**(Monitors open windows)*²

1. Class stand.
2. Stretching.
3. In columns of fours. Form to the left passing behind (eight counts). Left about face and repeat.

¹ Even in cold weather these exercises should be given out-of-doors, if the condition of the ground is suitable.

² *Ibid.*

4. Bend arms outward. Extend arms forward — 1. Return — 2. Same sideward — 3-4. Same upward — 5-6. Same downward — 7-8.
5. Step forward right, arms forward. Bend trunk half forward and raise arm upward — 1. Return — 2.
6. Arms sideward. Inhale and bend arms sideward — 1-8. Exhale — 1-8.
7. Position. Charge sideward left and swing arms forward sideward — 1. Return — 2. Same right — 3-4.
8. Position. Charge forward left and raise arms forward — 1. Bend trunk forward and place hands on hips — 2. Return — 3-4. Same right — 5-8.
9. Position. Bend trunk sideward left, raise right leg and arms sideward (slowly) — 1. Return — 2. Same with trunk bending right and raising leg — 3-4.
10. Breathing as in No. 6.

HEAD UP!

Games: —

Black and White.
Blackboard Relay.
Schoolroom Volley-Ball.

CHIN IN!

Dances: —

Jumping Jack.
Varsoviennne.
Sailors Hornpipe.

Grade VIII

(Monitors open windows) ¹

1. Class stand.
2. Stretching.
3. Flank ranks of four. Form forward left, half wheel right, right face, form forward left, right face.
4. Elbows backward. Extend arms forward — 1. Swing upward sideward — 2. Return — 3-4.
5. Stride stand. Bend trunk half forward and raise arms sideward upward — 1. Return — 2.
6. Position. Inhale, raise arms sideward, place hands on shoulders and bend head backward — 1. Exhale — 2-12.

¹ Even in cold weather these exercises should be given out-of-doors, if the condition of the ground is suitable.

7. Arms sideward. Bend knees full and raise arms upward — 1. Return — 2.
8. Position. Step forward left and place bells on shoulders — 1. Bend left knee, bend trunk sideward left and extend arms sideward — 2. Return — 3-4. Same right — 5-8.
9. Position. Bend knees full and raise arms forward upward (slowly) — 1. Return — 2.
10. Breathing as in No. 6.

HEAD UP!*Games: —*

Wand Race.
 Schoolroom Captain Ball.
 Double Relay Race.

CHIN IN!*Dances: —*

Csardas I.
 Csardas II.
 Highland Fling.

PRINCIPLES GOVERNING PHYSICAL EDUCATION

These lessons are samples of exercises which can be given. They are graded, those of simple coördinations coming in the lower grades and the more complex ones coming in the higher. Each lesson is so arranged that the exercises demanding most effort are "worked up to" and each contains what are known as corrective and physiologic exercises.

While all of this is desirable, remember that by giving exercises which involve the big muscles, those of the legs, back, and abdomen, you will give to your children ninety-five per cent of the value to be obtained from the periods usually assigned to physical training in the curriculum. While it is somewhat desirable to have graded lessons, *it is not at all necessary*; any other exercises of the big muscles doing nearly as well. I wish to emphasize this for the reason

that most teachers "swamp" themselves with mastering the technique of this work and entirely overlook the much more important things in physical education.

RECESSES

Organized recesses have not on the whole proved very successful for the following reasons: —

1. Playgrounds are too small.
2. Too many children are on the playground at one time.
3. Playgrounds are not properly equipped.
4. Activities which "have an appeal" are not selected.

I am quite sure that, if only one or two rooms of children of nearly the same age were sent to the average playground at one time and the children were shown how to organize their own games, recesses would be of much more value than they are generally.

When it is necessary for a whole school to be turned out on the playground at one time, if the number of pupils is large, children are likely to receive more benefit from an "absence of restraint" than from organized games under what will have to be close supervision. They need to "blow off steam." Considerable success, however, has been gained by the use of a few games which can be played on playgrounds of limited area.

Examples of games of this kind are "Rob the Mail." One boy is the mail carrier and is chased by all other

boys; the one who catches him becomes carrier and is chased. "Black Man," "Poison Spot," "Bull in the Ring," "Three Deep," "Drop the Handkerchief," and "Black and White" are also excellent games for recess.

INFLUENCING CHILDREN IN OUT-OF-SCHOOL HOURS

The out-of-school hours of children furnish by all odds the greatest opportunity for the promotion of physical activity, if we can find a way to utilize them. *It can be done by "harnessing" the normal desires of children; by making their activities the natural expression of their fundamental instincts.*

Child psychologists tell us that there are seven fundamental instincts to which we can appeal: —

Fighting
Hunting
Exploring
Building
Nurturing
Rhythm
Coöperation

It is true that these instincts vary in strength according to age, but a general plan which makes an appeal to all of them will promote the greatest interest. These are the instincts which, when satisfied by muscular effort, furnished the activities which produced an adequate physical education in the earlier life of the race, and only in recent years has a substitute been deemed necessary. There are still remaining many



A GAME IN THE SCHOOLROOM



A DANCE IN THE SCHOOLROOM

opportunities for expression along all these lines. The problem is to bring the opportunities and the children together in such a way that every child will want to express himself in each of the ways mentioned.

It will readily be seen that, if a teacher has a large number of children under her direction, she will need help in harnessing these instincts. She must delegate much of the detail work to the children themselves, and this means organization.

ORGANIZING A SCHOOL FOR PHYSICAL ACTIVITIES

To deserve a place in a public school system an organization should (1) give opportunity for expression to *all* pupils; (2) present "things to do" in such an attractive form as will insure their being done. Interscholastic, interclass and interroom plans fall short of the ideal in these particulars. The organization to make the greatest appeal must furnish opportunity and encouragement for team play, for individual competition, and for improvement in accomplishment.

Such an organization need not have a constitution and by-laws. It may be quite informal, but it should embody the following principles:—

1. The teacher should not be overworked. Confine her work to a reasonable school day.
2. Delegate most of the work of supervision to pupils, to develop leadership.
3. Engage all children in activities on an equal basis.
4. Furnish opportunity for team work.

5. Furnish opportunity for individual achievement.
6. Give credit for individual improvement.
7. Present opportunity for *all-around* activity.
8. Make it *desirable* for each child to participate in everything.
9. Show standing of each team and individual at all times. This organization is most useful during spring, summer, and fall; therefore the program should include activities adapted to these seasons.

Activities which would furnish in a high degree expression of the fundamental instincts of children might be selected as follows: —

| | | |
|-------------|---|--|
| Fighting | { | Baseball |
| | | Dodge-ball or volley-ball |
| Hunting | { | Athletics |
| | | Tether-ball |
| Coöperation | { | Quoits |
| Building | { | Kites |
| | | Bird-houses |
| | | Playthings |
| Nurturing | { | Gardening |
| | | Home |
| | | Box |
| | | Pot |
| | | Caring for pets |
| Exploring | { | Collecting — ferns, leaves, stones, grasses, woods, seeds, etc. |
| | | Observing — birds and their homes, animals both wild and domestic, in- sects, etc. |
| Rhythm | { | Folk-dancing |
| | | Singing games |
| | | Marching |

These are a few of the activities which can be chosen. They provide an all-around expression, which every boy and girl should get if he is really to be educated.

It is always desirable to separate girls from boys and to keep those of different ages together, providing for junior (six to nine years), intermediate (ten to thirteen years), and senior (fifteen to sixteen years) sections. When this cannot be done, the activities may be made more general without sacrificing the plans of procedure. What we are trying to do is to draw children into activity by means of their own desire for standing in the organization; we are trying to "add the power of organization" to the satisfaction of doing each of these things.

A chart which keeps constantly before the children their standing, and which keeps before the teacher the records, is essential. It should be kept in the school-room, and is the only record which need be kept, although it has been found convenient to have a double record system in case of accident to the chart.

The following chart was successfully used to bring children into activity. It is a chart for recording results of boys' activities. Some modifications to suit individual needs may be necessary, but some such chart is strongly recommended.

How to organize teams

It makes for success if, in selecting the teams, care is taken that they be evenly matched. This may be accomplished in the following manner:—

After *carefully* presenting the plan, the teacher may make the first groups. Have these play together for

a while (two weeks), with the idea that each is to decide on the best players for captains. It is well to describe a good captain. Then have the groups elect. After the election bring the captains together after school or at dinner at your home and explain to them the plan in detail. Then place on a blackboard or on paper the names of all boys who are to take part and have the captains "choose up." In a similar way the girls may be organized.

This plan gives you an organization of groups of seven or nine (as many as you need for baseball), so chosen that, supposedly, the best player is first and the poorest the last on each team, convenient if it becomes necessary to substitute players on other teams when a team is "short," a player from any other team, standing on a level or below him, being eligible. By keeping close to the captains through a "Captains' Organization," the work of the teacher can be minimized and the training of the boys and girls increased.

Scoring

Each child is given credit for the score of his team and in the individual activities gets credit for what he actually makes. For instance, if Team A defeats Team B by a score of 7 to 3, each member of Team A will get 7 points and each member of Team B will get 3 points.

The athletics are scored according to the accompanying chart.

STERLING SENIOR LEAGUE, 1918 — BOYS

[illegible]

THE UNIVERSAL ATHLETIC SCORING CHART

| POINTS | sec. | sec. | ti. | ft. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. | sec. | min. sec. | feet | ft.in. |
|--------|-------------|--------------|------------------------|----------------|----------------------|-----------------------|-----------------------------|------------------------------|---------------------------|-------------|---------------|----------------------|------------------------------|--------|
| | 75-yd. dash | 100-yd. dash | Pull-up chin on bar | Baseball throw | Running high jump | Running broad jump | Boys standing broad jump | Three standing broad jump | Putting the 8-lb. shot | 50-yd. dash | 300 rope skip | Basket-ball throw | Girls standing broad jump | |
| 51 | | | | 302 | | | | 22-11 | 35-2 | | 1-49 | 80 | 6-5 | |
| 52 | 10½ | | | 304 | | 13-6 | | 23 | 35-4 | | 1-49 | 81 | 6-5½ | |
| 53 | | | | 306 | | | | 23-1 | 35-6 | | 1-48 | 82 | 6-6 | |
| 54 | | | | 308 | 4-5 | | 8-1 | 23-2 | 35-8 | | 1-48 | 83 | 6-6½ | |
| 55 | | 12 | | 310 | | | | 23-3 | 35-10 | 7½ | 1-48 | 84 | 6-7 | |
| 56 | | | | 312 | | 13-7 | | 23-4 | 36 | | 1-47 | 85 | 6-7½ | |
| 57 | | | | 314 | | | | 23-5 | 36-2 | | 1-47 | 86 | 6-8 | |
| 58 | | | 13 | 316 | | | 8-2 | 23-6 | 36-4 | | 1-46 | 87 | 6-8½ | |
| 59 | | | | 318 | | | | 23-7 | 36-6 | | 1-46 | 88 | 6-9 | |
| 60 | | 12½ | | 320 | 4-6 | 13-8 | | 23-8 | 36-8 | | 1-46 | 89 | 6-9½ | |
| 61 | | | | 322 | | | | 23-9 | 36-10 | | 1-45 | 90 | 6-10 | |
| 62 | | | | 324 | | | 8-3 | 23-10 | 37 | | 1-45 | 91 | 6-10½ | |
| 63 | | | | 326 | | 13-9 | | 23-11 | 37-2 | | 1-44 | 92 | 6-11 | |
| 64 | 10½ | | 14 | 328 | | | | 24 | 37-4 | | 1-44 | 93 | 6-11½ | |
| 65 | | | | 330 | 4-7 | | | 24-1 | 37-6 | | 1-44 | 94 | 7 | |
| 66 | | | | 332 | | 13-10 | 8-4 | 24-2 | 37-8 | | 1-43 | 95 | | |
| 67 | | | | 334 | | | | 24-3 | 37-10 | | 1-43 | 96 | | |
| 68 | | 16 | | 336 | | | | 24-4 | 38 | | 1-42 | 97 | | |
| 69 | | | | 338 | | | | 24-5 | 38-2 | | 1-42 | 98 | | |
| 70 | | 12¾ | | 340 | 4-8 | 13-11 | 8-5 | 24-6 | 38-4 | 7 | 1-42 | 99 | 7-½ | |
| 71 | | | 16 | 342 | | 14 | | 24-7 | 38-6 | | 1-41 | 100 | | |
| 72 | | | | 344 | | | | 24-8 | 38-8 | | 1-41 | 101 | | |
| 73 | | | | 346 | | | | 24-9 | 38-10 | | 1-40 | 102 | | |
| 74 | | | | 348 | | 14-1 | 8-6 | 24-10 | 39 | | 1-40 | 103 | | |
| 75 | 10½ | | 17 | 350 | 4-9 | | | 24-11 | 39-2 | | 1-40 | 104 | 7-1 | |
| 76 | | | | 352 | | 14-2 | | 25 | 39-4 | | 1-39 | 105 | | |
| 77 | | | | 354 | | | | 25-1 | 39-6 | | 1-39 | 106 | | |
| 78 | | 18 | | 356 | | 14-3 | 8-7 | 25-2 | 39-8 | | 1-38 | 107 | | |
| 79 | | | | 358 | | | | 25-3 | 39-10 | | 1-38 | 108 | | |
| 80 | | 12¾ | | 360 | 4-10 | 14-4 | | 25-4 | 40 | | 1-38 | 109 | 7-1½ | |
| 81 | | | 19 | 362 | | | 8-8 | 25-5 | 40-2 | | 1-37 | 110 | | |
| 82 | | | | 364 | | 14-5 | | 25-6 | 40-4 | | 1-37 | 111 | | |
| 83 | | | | 366 | | | | 25-7 | 40-6 | | 1-36 | 112 | | |
| 84 | | | | 368 | | 14-6 | | 25-8 | 40-8 | | 1-36 | 113 | | |
| 85 | | 20 | | 370 | | | | 25-9 | 40-10 | 6¾ | 1-36 | 114 | 7-2 | |
| 86 | | | | 372 | | 14-7 | 8-9 | 25-10 | 41 | | 1-35 | 115 | | |
| 87 | | | | 374 | | | | 25-11 | 41-2 | | 1-35 | 116 | | |
| 88 | 10 | | 21 | 376 | | 14-8 | | 26 | 41-4 | | 1-34 | 117 | | |
| 89 | | 12½ | | 378 | | | | 26-1 | 41-6 | | 1-34 | 118 | | |
| 90 | | | | 380 | 4-11 | 14-9 | 8-10 | 26-2 | 41-8 | | 1-34 | 119 | 7-2½ | |
| 91 | | | 22 | 382 | | | | 26-3 | 41-10 | | 1-33 | 120 | | |
| 92 | | | | 384 | | 14-10 | | 26-4 | 42 | | 1-33 | 121 | | |
| 93 | | | | 386 | | | | 26-5 | 42-2 | | 1-32 | 122 | | |
| 94 | | | | 388 | | | | 26-6 | 42-4 | | 1-32 | 123 | | |
| 95 | | 23 | | 390 | | | 8-11 | 26-7 | 42-6 | | 1-32 | 124 | 7-3 | |
| 96 | | | | 392 | | 14-11 | | 26-8 | 42-8 | | 1-31 | 125 | | |
| 97 | | | | 394 | | | | 26-9 | 42-10 | | 1-31 | 126 | | |
| 98 | | 24 | | 396 | | | | 26-10 | 43 | | 1-30 | 127 | | |
| 99 | | | | 398 | | | | 26-11 | 43-2 | | 1-30 | 128 | | |
| 100 | 9½ | 12 | 25 | 400 | 5 | 15 | 9 | 27 | 43-4 | 6½ | 1-30 | 129 | 7-3½ | |
| | | | | | | | | | | | | 130 | | |

When a contestant wins a quoit match, 21 to 17, he gets credit for 21 points and his opponent 17. Slips of paper are provided for use of contestants in tetherball and quoits, and after they have played their match the score is placed on it and signed by both contestants. It is then turned over to the scorer or assistant scorer. All disputes are settled by the captains' organization with the aid of the teacher if necessary. When time is a factor, schedules in these events bring together only the captains in one group, the first men in the second, the third men in another, etc., etc.

The "points" credited for building something, for learning a folk-dance, for caring for a garden, or for making a collection, may be determined by the teacher. The schedule of points should be determined in advance and displayed. Performance may be rated A, B, C, D, according to quality. It will be noted that on the scoring chart there are not enough spaces to score every performance. This might be desirable if time and space permitted, but usually they do not, and the policy is to lead children to express themselves along a certain line just often enough to awaken a love for doing the thing for its own sake.

Requisites for success

A plan of this kind does not "just run itself." There are many chances for it to go astray, and the teacher must watch it carefully; but the results in

physical activity, mental and moral education, will entirely compensate for the time and thought expended.

Aids to success

1. Get the plan clearly in your own mind.
2. Present it to the pupils in the most attractive way.
3. Give it enthusiastic leadership.
4. Choose teams so that they will be of equal strength.
5. Post records accurately and promptly.
6. Do not "boss" the group; just direct it.
7. Make an "occasion" of the closing-up of the *season's* work.

The successful carrying-out of some such plan as this, which embraces the physical exercises in the schoolroom, the organized recess, and the organized out-of-school hours of school children, is an educational necessity, and will go far toward answering the five demands on teachers which are becoming more and more insistent, namely: —

1. A demand for counteracting the influence of long sitting in school.
2. A demand for physical activity.
3. A demand for the furnishing of "experiences" to children.
4. A demand for education for leisure time.
5. A demand for social education.

Helps for teachers

Other means of stimulating activity are found in such organizations as the Boy Scouts of America, Camp-Fire Girls, and the Athletic Badge Tests pro-

moted by the Playground and Recreation Association of America. Full information in regard to these organizations can be obtained by writing to

The Boy Scouts of America,
124 East 28th St., New York City.
Camp-Fire Girls of America,
118 East 28th St., New York City.
The Girl Scouts of America,
New York City.
Playground and Recreation Association of America,
1 Madison Ave., New York City.

RURAL SCHOOLS

The foregoing program of physical education, because it is relatively simple and is built upon the natural instincts of children, is as workable in one-room rural schools as it is in highly graded town and city schools.

The teacher's opportunity

Let us consider the problem of the rural teacher who seems to be most unfavorably situated, the one without a supervisor who can help, and without a special teacher of physical education to plan with her and coöperate in carrying out a program. Even without such help, desirable as it is, such a teacher is not helpless, for she has her conviction that her pupils need physical training, she has her human interest in the welfare of her pupils, she has her own intelligence, she has her pupils with their abounding vitality ready to be directed, and she has the big out-of-doors.

The older pupils as leaders

If the older pupils can be interested the teacher has made a good beginning. To start them thinking let them write letters to the various organizations mentioned in the previous section. These letters should briefly describe the school and ask for such help as the organization can give. Another letter may be directed to the Chairman of the Board of Education asking that one or two books be bought for the use of the school. These books may be chosen from the list given at the close of this chapter.

The returns from these letters will bring to the school information of a practical sort.

The next step is to organize the school, or the more mature part of it, as suggested in the preceding pages.

The officers and other appointed members of the athletic association of the school can, with a little training and later supervision, be put in charge of the activities of the younger pupils, of the games and contests, and they may even lead the setting-up or relaxation exercises in the schoolroom. These two- or three-minute stretching and breathing drills should not be omitted in the rural school.

EQUIPMENT

While apparatus is not essential at the outset a certain amount will soon be called for. A selection may be made from the following list: —

For boys and girls

Tether-balls
 Sand-pit for broad jumping
 Rubber quoits or rings
 Basket-ball and baskets
 Football
 Playground baseballs and bats
 Volley-ball

For boys

Pole-vaulting set
 Low horizontal bar
 A few low hurdles

For girls

Long jumping-ropes
 Short jumping-ropes
 Bean-bags
 Grace hoops
 Bag boards
 Soft rubber balls
 Indoor baseball

The funds to carry out a reasonable program of physical education can be secured. Every school, particularly every rural school, should have such a fund on hand all the time. Through entertainments of various kinds the school can earn money for library books, pictures, school-ground improvement, garden tools, and also for playground apparatus. The preparation and giving of these entertainments may be made substantially educational as is shown in the first chapter of the book.

Maintaining interest

Having started and organized the physical training interest, it may be maintained by the records of achievement, by giving an extra half-hour occasion-

ally to the competitive sports, and by a Field Day in June and October. This Field Day may be combined with Parents' Day, or what is better, all the schools of a town or district may come together for an all-day meet.

It is possible in many school districts to secure the coöperation of local organizations and of public-spirited citizens. Competent women of leisure may be induced to organize bird-study and wild-flower study groups of girls, or even a Camp-Fire or Girl Scouts troop. It may be more difficult to enlist the right kind of men in a boys' organization, but, if this can be done, a great service will be rendered. Boys in the country are as much in need of the social life of a well-conducted Boy Scouts company, they will be as much benefited physically and morally by the carrying-out of the wholesome program of this magnificent organization as will their city brothers.

Now that the program of physical education has been worked out from the standpoint of the natural activities of children, now that it is seen that the best place for exercise is the unlimited out-of-doors rather than a gymnasium, no matter how elaborately equipped, and that little apparatus is needed, it would appear that every school in the land, rural and city, should have its program of physical education as actively and effectively carried out as is the program of reading, writing, and arithmetic; for surely physical welfare is no less important than intellectual

culture as a factor in right living and in achieving a successful career.

COLLATERAL READINGS

1. *On the general subject: —*

- a. *Play and Recreation for the Open Country.* H. S. Curtis.
- b. *Gymnastics, Games, and Rhythmic Plays.* Lydia Clark.
- c. *Posture of the School Child.* Jessie H. Bancroft.
- d. *Education through Play.* H. S. Curtis.

2. *On athletics: —*

- a. *Rational Athletics for Boys.* Frederick J. Reilly.
- b. *Schoolyard Athletics.* James E. Sullivan.
- c. *Guide to Track and Field Contests.* W. A. Stecher.

3. *Handbooks: —*

- a. *Official Handbook of the Girls' Branch of the Public School Athletic League.* Published annually. New York City.
- b. *Spalding's Athletic Library.* (Each book treats of a separate sport. Send for the catalogue.)

CHAPTER IV

SEAT WORK IN PRIMARY GRADES

PLANNING THE WORK

SEAT work is one of the chief means at the teacher's disposal in the primary school for developing in pupils habits of independent, thoughtful work and for carrying out other educational aims of the school. It must not be thought of as isolated, as something with which to keep a class merely busy, but rather as an opportunity for deepening impressions, for training the pupils in expressing and using ideas, and for giving them skill in handling tools.

In general it will be found that, on the one hand, those activities are adapted to seat work that call for either creative or interpretative work. To this class belong reading, the working-out of number relations, some forms of word and sentence study, and simple tasks in manual work. It will be found that, on the other hand, those activities must be excluded that call for the careful building-up of certain definite habits. To this class belong penmanship, most forms of written composition, and such computations as the addition of long columns of figures.

Winning the coöperation of the pupils

To get the best results it is important that the pupils should take hold of their seat work with en-

thusiasm. This they will do if its character is such that they see the value of it, and if occasionally they are called upon to help in planning different tasks. When the opportunity occurs, the teacher should let the pupils suggest ways of carrying out a particular piece of work and then choose the way that they as a class, or as individuals, prefer to follow. In this work the teacher should act as a wise counselor. Those enterprises, which to the children in their first enthusiasm seem possible but which are beyond their ability to carry out, she should tactfully curtail without destroying the children's sense of responsibility and without taking away from them their privilege of making a choice.

When the tasks are of such a nature that they cannot be planned by the children, they should be put in a form attractive to them. A drill exercise conducted as a game or a puzzle will call forth earnest and prolonged effort, and therefore its effects will be more definite and lasting than if given merely as a prescribed task.

Economizing time in preparation

In preparing work it will be found economical of time so to plan exercises that those of different kinds may be exchanged among the pupils from day to day. The making of a large number of copies of each exercise will thus be avoided. When it is necessary to make duplicates, a hektograph may be used. For

further economy of her time a teacher should make use of the material of educational value that can be ordered from any of the large supply stores.

SUPERVISION

At the end of each recitation period, a teacher should take a few minutes to show her appreciation of what the children have been doing at their seats, to give help where it is needed, and to have the pupils examine and criticize each other's work. She may have the children leave their seats to see what others have been doing, or she may have different pieces of work held up before the class and talked over in a spirit of friendly criticism.

In inspecting the seat work young teachers sometimes make the mistake of breaking up a child's work when he has finished an exercise, and, in order to fill up time, of asking him to do the exercise again. This is likely to discourage a child, for it implies that his achievement is in the eyes of the teacher of little consequence.

Measuring results

To get an adequate return for the effort made, it is well occasionally to evaluate the work. In doing so the following questions will be found helpful: —

1. Is the seat work kept in such close relation to the work of the recitation that it is a valuable help in carrying out the aims of the school? Does it train the children to think and work by themselves?

2. Are the pupils interested in the work? Do they see its value so as to work through difficulties with persistence and even with enthusiasm? Are the pupils showing progress?
3. Is the work relatively free from influences that produce bad habits, nerve and eye-strain, and mental dullness that comes from mechanical repetition?
4. Does the work bring adequate returns for the effort made by the teacher and pupils? Is it of such a character as to be easily supervised?

SILENT READING — GRADES I AND II

When the silent reading done as seat work is kept in close relation with the recitations in reading, not alone does it aid materially in giving the pupils skill in interpreting the printed page, but it also develops their power of close concentration. Abundant material for this purpose should be provided in every school.

The morning study period

After the pupils in the first grade have mastered the first elements of reading, the training in silent reading may be started advantageously. The teacher chooses for this work a few minutes early in the day when the children are still fresh, and dignifies the time used by giving it the name, "Our Study Period." The teacher sits quietly at her desk with a book before her. The members of the class, imitating her, sit quietly at their seats busily reading.

At first the lessons that have been read in class time are used. The motive given for studying is, "Let us

study so that we may read our lesson smoothly," or, "Let us see if we can read the story from the beginning to the end."

Later on this quiet study period may be used for reading new stories. For example, some morning the teacher may choose a simple version of such a story as *Snow White and Rose Red*. Books are passed out, the right page is found, and then the teacher says, "In our books we have the story of something strange that happened to two little children. One stormy evening they heard a knock at the door. They opened the door and saw something that surprised them very much, something that neither you nor I have ever seen when we have answered a knock at the door. I want you to read the story and find out what it was these children saw. I shall know by your faces when you come to that part of your reading."

The teacher, with a copy of the book in her hand, then sits quietly at her desk ready to give an appreciative smile whenever a child glances at her to show his pleasure in the "surprise" in the story. Meanwhile she is studying her children to note which are having difficulty, and to discover the possible causes. During the recitation that follows the study period, the children are asked to talk about the interesting things found in their reading. Later particular attention is given to those children who were having difficulty during the silent reading period.

Instead of having all the children read the same

story, each child may be asked to choose and prepare a different story with which to entertain the class. For this purpose books may be cut up. The rhymes and simple little stories that they contain may be mounted on the inside of leaflets made of dark-colored drawing paper folded once. A title and picture may be pasted on the outside of each leaflet. The children should be encouraged to study these selections at school and to take them home for practice in reading.

Reading a book by one's self

The early morning study period should be continued well into the second grade. As soon as the pupils have acquired some power in concentration they will be able to study when a recitation is going on; but at least one period should be set aside each session for quiet study when there are no disturbing noises or movements.

When in the teacher's judgment pupils are able to read through an entire book by themselves, it should be given them to keep in their desks. Each pupil should use some form of bookmark by which to keep his place from day to day. The teacher occasionally should ask questions about the stories read, saying: "Did you find any interesting stories?" "What were they about?" or, "Which story did you like the best?"

It is quite possible for some of the children to read from ten to twenty supplementary readers in a year

and to reap all the training in concentration and in fluency that such a task means. For this work texts simpler than the ones studied in class time should be ordered, and, for the sake of economy, there should be no duplicates. A set of twenty different books will, it is evident, supply a larger amount of reading than a set all alike.

SILENT READING — GRADES III AND IV

Finding the answer to a problem

In the third and fourth grades one or more questions may be given the pupils to answer as they study their reading lessons. These questions may be of this order: "Can the story be given another name?" "What is the most interesting thing that happens in the story?" "What persons do you like the best in the story?" "Why?" "If you were going to make a picture of some part of the story, what would you put in it?"

Finding something to tell

A reproduction of a long story when given by a single child is usually tedious to a class, but a recitation where each child is asked to tell just one new thing about the story that is being studied is enjoyed by every one. No attempt to have the story told in order need be made. Each child should be allowed to contribute his part at will.

Being ready with a question

Instead of pupils being ready to answer questions or to tell a part of the story, each child may be asked to prepare, during his study period, one or more questions to ask his classmates. The questions selected should be only those that the pupil himself can answer.

Planning a dramatization

Another profitable form of silent study may be applied to dramatic readers. The books are given out and the pupils are asked to plan, while studying, how to carry out the play they are reading.

Guessing riddles

Riddles pasted on leaflets of dark-colored drawing paper are passed out to the pupils to be read and guessed during a study period. Such, for example, as:

I

They are seen on the trees;
 They are seen on the ground;
 They are seen in the air softly whirling around;
 They're as bright as the gay feathered birds we see fly,
 Or a piece broken off a clear sunset sky.
 They sing rustling songs
 When our footsteps they hear,
 And their name is well known, for they come every year.¹

¹ Answer: Autumn leaves.

II

Ring the bell and blow the horn,
The house has run away,
The parlor and the sitting-room,
I could n't make them stay.
The kitchen and the dining-room,
Have gone off arm in arm
And all the little bedrooms, too,
I fear they'll come to harm.¹

WORD AND SENTENCE DRILLS — GRADES I AND II

The character of the word and sentence drills given will depend upon the methods used in teaching reading and spelling, but, in general, the following exercises will be found helpful.

Matching script with print

To train pupils in the recognition of words in both script and print, cards of oak tag are made for sentence building. On one set of cards is printed a group of from ten to fifteen sentences containing the words upon which a class is to be drilled. The words on these cards are cut apart, and the sets put into separate envelopes together with the same sentences in script written on strips of oak tag. Each child is given an envelope from which he takes the cards. He then builds sentences, in the way shown below, by placing the printed words below the corresponding words in the sentence in script.

¹ Answer: Railroad train.

Sing, little bluebird

Sing,

little

bluebird.

At the close of the period different children should be called upon to read the sentences that they have built.

When cards for this exercise are purchased from a supply store, care should be taken to buy those on which the words are capitalized on one side of the card and written with small letters on the other. To economize writing, if the sentences to be reproduced do not come in script with the sets of printed cards, the teacher may use a hektograph, or she may write the sentences on the blackboard instead of supplying each pupil with a set. When a teacher is dependent on her own resources for the material for this exercise, she will find it a good plan to cut out sentences from discarded primers, being careful to trim off from the printed words all soiled margins.

Matching script with script

The device given above of matching script with print may be used also for training pupils in the recognition of script alone. In this case both sets of cards, the uncut sentence cards and the word cards, are in script. To economize labor in preparing this exercise a teacher may make the sentences in the dif-

ferent envelopes vary from one another. Instead of making twenty-one duplicates of an exercise, for example, she may make three sets of seven envelopes each, which are changed about until each pupil has become skillful in the use of all three sets of exercises.

*Building original sentences and sentences from
memory*

Later on, after the pupils have become familiar with a good many sentences, the teacher removes the sentence cards from the envelopes used in the exercises above and asks the pupils to build sentences from memory and to think out sentences of their own that could be built from the words in the envelopes. Here again at the end of the period the teacher should take a few moments to look over the work and to listen to the reading of some of the sentences.

Naming colors

(1) Into each envelope to be passed to the pupils are placed pieces of paper of different colors together with the names of the colors written on oak tag. Each child is supposed to arrange the colors in a rainbow sequence — red, orange, yellow, green, blue, violet — and after each to place its name. (2) In each envelope is placed also a carefully selected colored picture. The child's task then is to place beside the picture the colors found in it and the written name of each color.

Building Mother Goose rhymes

In each envelope to be passed to the pupils is placed a Mother Goose picture together with a dissected rhyme describing it. It is the task of each pupil who receives an envelope to discover the rhyme and then to work it out with the word cards.

Arranging words by sounds

Words upon which the pupils have been working in their lessons in phonics are put into envelopes. These are distributed to the pupils and directions are given them to group the words by initial sound or by end rhyme, as follows: —

| | | | |
|------|------|------|------|
| baby | red | sing | man |
| ball | run | so | more |
| blue | rock | see | my |
| play | tree | cry | run |
| say | see | fly | fun |
| may | bee | try | gun |

Compositions

Original compositions by pupils need to be carefully supervised by the teacher. It is only by guarding against mistakes that the formation of bad habits can be prevented. For this reason the teachers in the first and second grades should be discriminating in their use of this form of activity for seat work. They should seek exercises that are stimulating and profit-

able, but which do not require the use of words that the pupils have not mastered.

Filling in blanks

A group of sentences on some topic that the pupils are studying is written on the blackboard with the omission of one or more important words in each. The missing words are arranged out of sequence in a column at the right. The children copy the sentences, writing in the words that are missing. The following shows the form in which the work is written at the blackboard: —

| | |
|--------------------------------|------------|
| An — boy lived in a wigwam | forest |
| that stood in a — near a lake. | canoe |
| On the shore lay his — made | wigwam |
| of — —. In the forest another | birch bark |
| — could be seen. This was | deer skin |
| covered with — —. | Indian. |

Describing pictures

Sets of cards are made upon which attractive pictures are pasted and words and questions are written. One picture might be that of two children sitting on a garden wall looking down at something on the ground that is not included in the picture. Beneath the picture would be written the new words needed by the children in describing the picture together with questions to be answered, as follows: —

| | |
|---------|---------------------------------|
| garden | Where are the children sitting? |
| looking | What are they doing? |
| hopping | What do you think they see? |

The sentences that the pupils would be expected to write are: —

The children are sitting on a garden wall.
 They are looking down.
 I think they see a toad hopping about.

WORD AND SENTENCE DRILLS — GRADES III AND IV

Preparing for an exercise in dictation

As a class exercise the pupils compose orally a group of sentences, or a paragraph on some topic that they are studying. As each gives a sentence it is written on the blackboard. The pupils criticize their own work; and then, as seat work, the pupils copy and study the exercise that they may write it correctly later in the day when the teacher dictates it to them. In this exercise it sometimes helps to impress the correct form on the minds of the pupils if particular difficulties, such as silent letters, double consonants, capitals, and marks of punctuation, are underlined with colored chalk.

Filling in blanks

For a description of this exercise see page 140.

Sentence puzzles

The following exercise is enjoyed by the pupils and is profitable to use occasionally. Write, in columns, words out of which sentences can be built; for example, the following: —

| | | | |
|-----------|--------|--------|---------------|
| chicks | little | their | if |
| followed | no | kept | would |
| The | Each | All | each |
| was | acorn | little | "Peep! Peep!" |
| downy | was | to | behind |
| by | chick | the | little |
| partridge | larger | ones | one |
| twelve | an | mother | cry |
| mother | than | close | left |

The sentences which pupils could build from these words are: —

The mother partridge was followed by twelve downy chicks.

Each little partridge was no larger than an acorn.

All the little ones kept close to their mother.

"Peep! Peep!" each little one would cry if left behind.

A hygiene puzzle

Pictures showing such hygienic processes as brushing the teeth or washing the hair are cut from advertisements by the pupils and brought to school. The best pictures are chosen, mounted on cardboard, and placed in envelopes together with cut-up sentences. An envelope is given to each pupil that he may arrange the words into such sentences as, *To look well, I must brush my teeth. Brush up and down and from side to side.* These puzzles, of course, should not be given before the pupils have had the rules as part of a lesson in hygiene.

Describing pictures

As in the exercise on page 140, attractive pictures are mounted on cardboard. Underneath each is a

list of new words needed to describe the picture. The pupils are expected to write original sentences based upon the picture.

*Selecting words*¹

As a part of their word study a class will find it profitable in going over a reading lesson to make a list of all the words that are names, of all those that describe objects, and of all the words that show action.

SEAT WORK IN NUMBER — GRADES I AND II

The first work in number should be kept informal and concrete. Not until the children have built up from experience a good foundation for the work should any so-called "lessons" be given or any seat work attempted. Counting, measuring, recognizing the number of objects in a group, should be introduced as the schoolroom occupations require them, but none of this work should be forced upon the children.

The following exercises presuppose that the pupils have passed through this early stage and are ready to study number relations and symbols.

Making toy money

After the pupils have been taught to recognize the cent, nickel, and dime, they will enjoy making toy money from cardboard or paper. To make a really satisfactory set of coins the following plan may be

¹ For other exercises of this nature both language and spelling books should be consulted.

used. For the cent the teacher covers both sides of a piece of cardboard with gilt paper; for the dime she covers cardboard with silver paper; for the nickel she uses lead foil, being particular to see that her glue is strong and that it covers every portion of the cardboard. This manufactured gilt, silver, and lead cardboard the teacher cuts into strips a little less than an inch wide and about twelve inches long. She distributes the strips, one of each kind, to each pupil. For models she gives the children circles of cardboard a trifle smaller than the real coins. These the pupils mark around, then they cut out the coins and place them in boxes or envelopes provided for the purpose. No figures are written on the coins.

Counting out coins

After the work in coins has made some advance and the pupils have learned the figures from 1 to 10, they may be taught to arrange their coins from blackboard directions, as follows: —

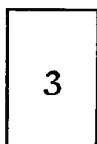
| | | |
|---------|-----------|---------|
| 2 cents | 1 nickel | 3 dimes |
| 3 cents | 4 nickels | 5 dimes |
| 5 cents | 2 nickels | 1 dime |
| 4 cents | 3 nickels | 4 dimes |

Later the teacher may write on the blackboard a price list, and, after a drill in class, the pupils may arrange in order the coins necessary to pay for each article. The price list might consist of: a 5-cent ball, a 3-cent pencil, a 2-cent eraser, a 4-cent top, a 10-cent doll, and an 8-cent book. At the end of the period, the

teacher should go up and down the aisles carefully noting the work.

Matching cards

To assist pupils in mastering number symbols, cards one by one and one half inches are made of oak tag. On one set of cards the figures from 1 to 10 are written. On another set, a variety of objects is drawn, such as a group of dots, a group of lines, a group of stars, or a group of squares, each corresponding to a number in the first set.



The children arrange the cards so that, for example, the card upon which the figure 3 is written lies beside the card upon which three objects have been drawn.

After arranging the cards, each pupil makes a set of his own for home play. In place of the cards with the drawings the pupils may be given cards of squared paper¹ upon which to color given numbers of squares, or they may place pegs or other counters beside the cards upon which the figures have been written.

Playing games with domino cards

While the pupils are in the concrete stage of learning, they find both pleasure and profit in working with tiny domino cards. Cards one by two inches or one and one half by three inches are cut out of oak tag. Pin pricks are made by the teacher to indicate where

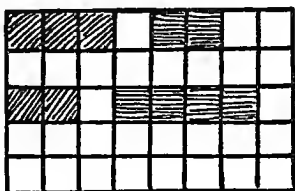
¹ Manila paper may be purchased ruled into squares measuring on each side one, three-fourths, one-half, or one-fourth inch.

the dots are to be placed. Each pupil marks in the dots on a set of cards. He then uses them (a) for matching sums. He places in a row all the cards that contain the same number of spots. In one row, he places the dominoes containing 3 and 3, 4 and 2, 5 and 1, and 6 and 0; in another row he places 4 and 3, 5 and 2, 6 and 1, and so on. Then he copies the sums. He may use the cards (b) for matching the ends of the dominoes and finding all the sums possible in that way, namely: 1-1, 3-3, 4-4, 5-5, and 6-6; or (c) in placing the cards end to end and copying the sums found. After playing these simple games at school the pupils should be encouraged to take the domino cards home and to play with them there.

Grouping units

Following the exercises and games in recognizing small single groups of objects, just described, columns of the kind shown at the left may be written on the blackboard. At their seats pupils should arrange counters in groups to correspond with these problems, as 11 11; 1111 11. This exercise, which is intended for the latter part of the first grade and the first part of the second grade, is basic work for the finding of sums and products; but no answers should be required. The exercise should be continued day after day, varying both the problems and objects or counters

used. Toy money may be used, wooden pegs, squared paper, or some other material that is adapted to the work. When using the squared paper, pupils may indicate the problem with colored crayons. For example, $3 + 2$ might be represented by coloring 3 squares green and 2 squares yellow; $2 + 4$ by coloring 2 squares green and 4 yellow.



Finding sums and products

When the pupils have acquired the ability to group units as described above, answers may be called for, first orally and then in writing. The teacher writes at the blackboard a series of problems similar to that shown here.

| | |
|--------------------|--|
| $2 + 2 =$ | |
| $4 + 2 =$ | |
| $3 + 3 =$ | |
| $4 + 3 =$ | |
| $4 + 4 =$ | |
| $2 \ 2\text{'s} =$ | |
| $2 \ 3\text{'s} =$ | |
| $2 \ 4\text{'s} =$ | |
| $5 + 3 =$ | |

The pupils arrange their counters on the left side of their desks, leaving spaces at the right for the use of paper and pencil. Then they copy the problems and their answers on paper. This is another device to use day after day until the children are ready to leave concrete work and to think the number combinations abstractly.

To give variety and meaning to the work the pupils may be asked occasionally to make "puzzles" for the other children to solve. These may be made by coloring squares on squared paper, or by making large

domino cards. If a pupil wishes to give the problem $4+5=?$ to his classmate, he prepares a card by drawing on one side 4 circles, squares, or lines, adjacent to 5 circles, squares, or lines and by writing on the other $4+5=?$

Finding differences

The first work in subtraction is profitably given as a form of addition. After the pupils have learned a number of sums, a question mark may be substituted for one of the numbers making the sum. The problem is to find the missing number; $2+3=5$ is written $2+?=5$. The missing number may be found by the use of concrete material, if necessary.

Later on the minus sign may be used, but, as shown below, the problems should first be expressed as problems in additive subtraction.

| | |
|----------------|----------------|
| $4+?=7$ | $7-4=?$ |
| $2+?=3$ | $3-2=?$ |
| $5+?=8$, etc. | $8-5=?$, etc. |

Finding quotients

Just as the first work in subtraction is most easily mastered in its relation to addition so the first work in division is most easily grasped if it is taken as a new way of looking upon familiar facts in multiplication. The problem $3 \text{ 2's } = ?$ is turned about to $? \text{ 2's } = 6$. The pupils

may be asked to find the missing number in problems similar to those shown at the left. Counters may be used when they are needed. The completed table is written on paper.

Analyzing numbers

After progress has been made in finding sums, products, differences, and quotients, different numbers may be given to be analyzed. If on one day the number chosen is 8, the pupils will be able either to think out, or to find out with the counters, such facts as: $1 + 7 = 8$, $2 + 6 = 8$, $3 + 5 = 8$, $4 + 4 = 8$, $5 + 3 = 8$, $6 + 2 = 8$, $7 + 1 = 8$, 2 4's = 8, 4 2's = 8, $8 - 1 = 7$, $8 - 2 = 6$, $8 - 3 = 5$, $8 - 4 = 4$, $8 - 5 = 3$, $8 - 6 = 2$, $8 - 7 = 1$, $\frac{1}{2}$ of 8 = 4, $\frac{1}{4}$ of 8 = 2.

Reviewing combinations

(1) A list of combinations that form two or three different numbers is written on the board. The pupils at their seats copy the combinations, arranging them in columns under the number which is the sum of each. The two columns below at the left show what might be written on the board; the three columns at the right, the arrangement made by the pupils.

| $8 + 4$ | $6 + 6$ | <u>10</u> | <u>11</u> | <u>12</u> |
|---------|---------|-----------|-----------|-----------|
| $4 + 6$ | $5 + 5$ | $4 + 6$ | $8 + 3$ | $8 + 4$ |
| $5 + 7$ | $8 + 2$ | $9 + 1$ | $9 + 2$ | $9 + 3$ |
| $8 + 3$ | $9 + 2$ | $5 + 5$ | $7 + 4$ | $7 + 5$ |
| $9 + 1$ | $7 + 4$ | $8 + 2$ | $6 + 5$ | $6 + 6$ |
| $9 + 3$ | $7 + 3$ | $7 + 3$ | | |
| $7 + 5$ | $6 + 5$ | | | |

(2) On cards four by three inches are written sums and differences with one number missing. On different sets of half-inch squares are written the numbers from 1 to 12. The children use the small squares to fill in the missing numbers on the large cards. The cards used are shown below: —

| | | | |
|------|------|----------|---|
| 4 + | = 10 | 7 - 4 = | <div style="border: 1px solid black; padding: 2px 5px;">6</div> |
| 6 + | = 8 | 9 - 5 = | <div style="border: 1px solid black; padding: 2px 5px;">2</div> |
| 2 + | = 7 | 10 - 2 = | |
| 5 + | = 10 | 8 - 5 = | <div style="border: 1px solid black; padding: 2px 5px;">5</div> |
| 4 + | = 9 | 10 - 6 = | |
| 3 + | = 10 | 9 - 4 = | <div style="border: 1px solid black; padding: 2px 5px;">7</div> |
| etc. | | etc. | etc. |

Self-testing drill cards

| | |
|---------|------|
| 3 + 4 = | 7 |
| 5 + 1 = | 6 |
| 3 + 3 = | 6 |
| 4 + 4 = | 8 |
| 2 4's = | 8 |
| 3 2's = | 6 |
| 5 + 5 = | 10 |
| 4 + 5 = | 9 |
| 3 + 4 = | 7 |
| 5 + 3 = | 8 |
| etc. | etc. |

Front

Back

Cards are cut about two and one half inches wide and about eight inches long. The length will depend upon the length of the number paper used. On one side of these cards are written problems to be solved; on the other side the answers. Each child is given a set of these cards. As soon as he finishes the

problems on a card, he turns it over and corrects his answers. To save making a great many sets of cards eight duplicates of each may be made, using different colored cards, as: Red 1, 2, 3, 4, 5, 6, 7, 8; Blue 1, 2, 3, 4, 5, 6, 7, 8; Green 1, 2, 3, 4, 5, 6, 7, 8; etc. In conducting this exercise, the pupils should be shown that the game is to write the answers *before* turning the cards over. If no record is kept of this work there will be less temptation to copy answers.

Measurements

Directions may be written at the blackboard for seat work in drawing lines and rectangles. For example:

Draw a 4-inch line. Draw a line one half as long.

Draw an oblong 6 inches long and 1 inch wide. Color one half of it green.

But in general this work is more effective when related to the manual work than when given in formal exercises.

Carrying out a project

In preparing for a school store, in furnishing a play-house, or in carrying out any other similar project, there are many things that may be done as seat work. For suggestions see pages 153, 155, and 156.

SEAT WORK IN NUMBER — GRADES III AND IV

The fundamental number facts

Pupils in the third and fourth grades are able to work out number relations by themselves, to analyze

numbers, to rebuild tables that they have studied, to find answers to problems written on the board or taken from a textbook. As an aid in this work it will be found helpful to use test cards similar to those described on page 150. After using these, each child should make a list of the number facts upon which he is weakest and concentrate his attention on them.

The fundamental processes

Problems involving long columns of figures should be avoided as seat work, not only because they cause eye-strain, but because they give the pupil an opportunity to form the habit of finger-counting and to become sluggish in his thinking. Problems in addition, subtraction, multiplication, and division, used as seat work should be simple and well within the pupil's ability. The purpose of these reviews is to keep the combinations of numbers fresh in the pupils' minds. Only those problems should be given that the pupils can do automatically.

Solving problems

The study of problems where no answers are written gives excellent results as seat work. A set of problems may be taken from a textbook, written on the blackboard, or printed on slips of paper. The children think through the problems and then indicate the solution of each. For example, the solution of a problem requiring the perimeter of an 18-inch square would be indicated in this way, $18 \text{ in.} \times 4 = ?$

Making original problems

Price lists or other data for problems are written on the blackboard, and the pupils are asked to make problems on, for example, the cost of two articles, the amount of change to be received from a dollar bill in buying either one, two, or three articles. The pupils may write their work either in the form of questions such as, "How much must I pay for a baseball costing \$1.25 and a bat costing 50¢?" or as statements such as, "For a baseball costing \$1.25 and a bat costing 50¢, I must pay \$1.75."

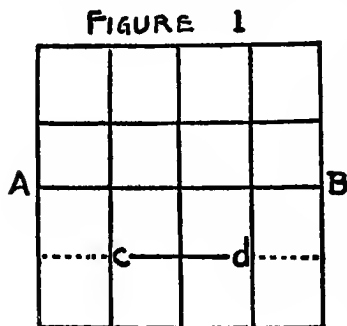
Carrying out a project

In carrying out almost any school project there are usually several things that may be done as seat work in number. When plans are being made for a home or school garden, pupils may make individual studies at their seats, drawing diagrams of plots and divisions of plots to easy scale. If a ticket office is the project under consideration, the pupils may make tickets, and practice making change with paper money of their own making. For a grocery store, there are labels to be made, paper bags to be constructed, and bills to be made out.

MANUAL WORK — GRADES I AND II

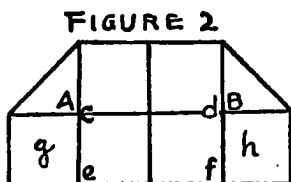
There is a considerable variety of what is generally called manual work that can be done by the pupils in school at their seats. Much of this must be

directed and closely supervised, but some can be done independently by the pupils. Preparations for a holiday or other festivity, devices for games, toys for

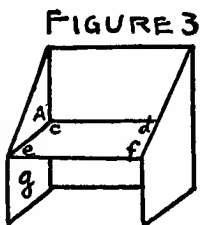


home play, the material to be used in the school lessons, or in the decoration of the schoolroom — all of these may furnish motives and problems for seat work.

Making toy furniture



For a settle a square of stiff drawing paper is folded into sixteen small squares and slit as indicated by the dotted lines in Fig. 1.



The paper is then folded along AB so as to form a rectangle two squares wide and four squares long. The point A is then folded over to the point c and the point B to the point d as shown in Fig. 2.

The rectangle $cdfe$ becomes the seat of the settle

by folding the lower four squares up and then folding the squares *g* and *h* to meet the sides that are folded in to form the arms. A little paste will hold the settle together. (See Figure 3).

A chair is made from this same model by using a rectangle three squares wide and four squares long in place of the rectangle four squares by four squares. A bed may be made by using one settle for the headboard and one for the footboard and by pasting between them a rectangle of paper made to fit the right space. A table may be made by inverting a box after cutting out legs with cross supports.

This particular type of paper furniture is useful because it is easily made and because it is stable. A still more satisfactory type is made of small cardboard boxes carefully selected so as to be of the right shape and size. To these boxes are glued pieces of cardboard for the backs of chairs, the ends of beds, etc., but this form is difficult to make.

Another exercise that is of value is that of asking the children to reproduce in paper the furniture at home. They will need some help in this, but the project nevertheless will not only make the children observant but it will bring out their inventiveness.

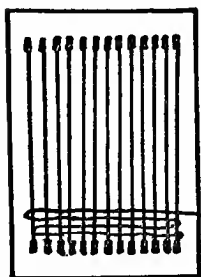
The furniture made may be used either for furnishing a playhouse or it may be used in playing store.

Weaving on cardboard looms

For weaving mats for a playhouse looms may be made from the cardboard backs of number paper pads

or from other pieces of cardboard six by eight inches. Slits one half inch long are made at distances one half inch apart across the ends of the cardboard.

The loom is then strung with a coarse jute twine in an attractive color. The string is made to go up



and down on one side of the cardboard only. The children use coarse weaving needles threaded with jute for the weaving, going back and forth across the warp. Striped borders in harmonious colors may be woven at each end.

Caution should be taken by the children so as not to let the rug become narrow near the middle. A doll's hammock is made in a similar way by increasing the length of the warp.

Round looms on the same principle as that above may be used for weaving mats, dolls' tam-o'-shanters, and doll's hats. The circumference of a cardboard circle is notched at convenient distances and the loom strung so that the warp forms the radii of the circle.¹

Construction work for playing store

Besides making toy money for playing store (see page 143), the pupils may make toys and other articles

¹ For further exercises in weaving, consult *Primary Handwork*, by Wilhelmina Seegmiller, published by Atkinson, Mentzer & Grover.

to be used as merchandise, also paper bags, and coin boxes. For a paper-doll store, dolls representing the different nations may be cut out and their costumes appropriately colored. For a toy store, windmills, boats, drinking cups, boxes, and envelopes may be folded from paper. For a furniture store, paper furniture similar to that on page 154 may be made. To prevent confusion in buying the number of different articles used at a time should be limited to a very few.

It is well to have the pupils make each article so that after a number have been chosen for the school store all the others that have been neatly made may be taken home for play there.

The toy menagerie

For making a toy menagerie cardboard patterns of elephants, giraffes, tigers, lions, and other animals should be given the pupils to trace around on heavy drawing paper. Pictures of the animals should be placed in sight so that the pupils may show with wax crayons the coloring and markings of the animals. To make the animals stand stably they may be glued to small blocks of wood.

Illustrating stories

Many of the fables, myths, old nursery tales, and Mother Goose rhymes suggest illustrative work in paper-cutting; in drawing with colored chalk, wax crayons, or charcoal; and in modeling in clay or

plasticine. Stories suitable for this purpose are *The Fox and the Stork*, *The Origin of the Redheaded Woodpecker*, *Little Red Riding Hood*, *The Three Bears*, and *Little Miss Muffet*. The teacher should watch for opportunities in connection with her story-telling and the reading lessons, and, when the conditions seem right, suggest the making of pictures. The success of the work will depend in a measure on the ability of the teacher to arouse the imagination of the pupils. Often this can be done by a few words of conversation during which she talks over the story with the children.

The primary reading books are generally profusely illustrated. Pupils may select a simple detail of a picture, sometimes with the help of the teacher, and make copies of it with pencil or crayon. Outline pictures are particularly suited to this. Crude results should not discourage the teacher.

It helps at times to hektograph outlines of pictures for the children to color and complete. For the story of *Piccola* the outline of a wooden shoe with a bird peeping from it could be hektographed; for the story of *Peter Rabbit* a little rabbit in a coat running toward a watering can.

Making posters

At Christmas time a silhouette of a fir tree may be cut from green paper by the teacher and mounted. For this tree, which is made about eighteen inches high,

the pupils cut from paper tiny candles, oranges, apples, horns, dolls, and other decorations and toys. These they paste on the tree using gilt stars for the lights on the candles. The work is done coöperatively, each pupil choosing the things that he wishes to make.

Picture puzzles

Attractive pictures related to nature study or some other line of school or home interest are pasted on heavy cardboard and pressed so that they do not curl. Each picture is then cut into differently shaped pieces and placed in a box by itself. The task of each pupil is to take one of the puzzles and fit it together on his desk. When inspecting the work the teacher should note the neatness with which the parts have been placed together.

MANUAL WORK — GRADES III AND IV

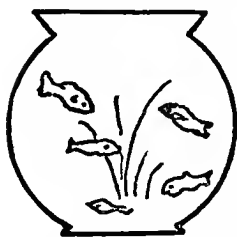
Decorating a schoolroom with a frieze

In connection with the work in literature, geography, or nature study, friezes may be made for the schoolroom. These may be fitted to a space above some blackboard and should be about half a yard wide. Ingrain wall paper of a dull blue may be used as the foundation of the picture and a soft green, if appropriate, for the foreground. On these are pasted figures cut from paper of different colors and carefully grouped. The scene represented may be a fa-

miliar one, such as that of a flock of birds alighting on telegraph wires, or a farm scene; or it may be an Indian village, a scene in Holland, a Japanese garden, or Eskimos with their igloos and dog teams. As seat work the pupils cut out trees, houses, people, birds, and other figures to be used; and then, as part of a drawing lesson, they plan the grouping. The pupils are careful, for example, to choose the figures best adapted to the picture, and then, that the perspective may be right, to place the smaller objects in the background and the larger ones in the foreground.

Making transparencies

Another form of decoration which pupils enjoy is the making of transparencies for the schoolroom windows. These are made of sheets of waxed paper



framed in with dark cardboard. Between two sheets are pasted figures cut from gayly colored paper by the pupils. One effective transparency is made in the shape of a fish bowl framed in by cardboard, that is, the silhouette of a fish bowl about

ten inches in diameter is cut out of a sheet of cardboard and waxed paper doubled is pasted into the cardboard to take its place. Between the sheets gold fish, cut out by the children, are pasted swimming

in various directions.¹ Duplicate transparencies are made for the various windows thus making a room look very festive.

A night scene may be made by coloring Japanese rice paper a dark blue and by pasting in the foreground the silhouettes cut from black paper of a church steeple, houses, and trees. To represent the stars pin pricks are made.

Making a scrapbook

Pictures cut from the advertising matter in our best magazines and from old catalogues may be used for this purpose. The scrapbook which the pupils choose to make may be a farm book showing pictures of chickens, pigs, horses, cattle, a field of grain and men reaping; it may be a garden book showing the different kinds of flowers and vegetables, and the different tools used in a garden; it may be a book of transportation showing canoes, steamships, freight trains, auto trucks, wagons, airships, and other means of transportation; it may be an automobile book; or it may follow some other interest of the pupils.

After showing the pupils how to cut out pictures and how to arrange them, and then how to paste them on a page neatly, the leaves of the scrap book may be made one at a time, or all the pictures may be col-

¹ For this design the author is indebted to Miss Ethel V. Knight, of the Training School of the State Normal School, at Salem, Massachusetts.

lected and the pasting be done at one time. In general it is better to have a task of this sort pushed through while enthusiasm lasts rather than to let it drag on many days.

Work done to measurements

Beside the free-cutting described above, work requiring exact measurements may be done as seat work. To this class belong Christmas cards and other gifts, calendars, valentines, games, and number puzzles.

COLLATERAL READINGS

1. *On the educational value of handwork: —*
 - a. *Schools of To-morrow*. John and Evelyn Dewey.
 - b. *The Place of Industries in Elementary Education*. Katharine E. Dopp.
2. *On paper-cutting: —*
Seat Work and Industrial Occupations. Mary A. Gilman and Elizabeth B. Williams.
3. *On weaving: —*
Primary Handwork. Wilhelmina Seegmiller.

CHAPTER V

DRAWING AND APPLIED ART

I AM sure that teachers want to know how to teach drawing well. I know that they delight to teach it when they are sure of their subject-matter. When boys and girls are asked to do drawing work which is reasonable and right to them, they respond with such a working enthusiasm and real desire that the teacher must join in spirit. No other subject has more power to bring forth the very best effort which a class is capable of making. But all desire and enthusiasm will evaporate like the morning mist unless the teacher knows a right solution of her drawing problem.

Therefore, we shall devote the larger part of our text and illustrations ¹ to a definite program — the consideration of good drawing and designs and how to make them. As a second consideration, we shall discuss methods of teaching drawing. There is a somewhat widespread belief that the methods of teaching drawing belong in a realm to which only the elect have admittance. It is not so. One should teach drawing as one should teach spelling, or arithmetic, or other school subject. This will be made plain in the pages following.

¹ The kind of paper used in this book necessitates the use only of pen-and-ink drawings as illustrations.

NATURE DRAWING

The most evident, immediate aim of a lesson in nature drawing is to train the eye to see. To draw successfully from a spray or plant, one must scrutinize it carefully. (For this reason noted scientists insist that their students draw in detail every natural form studied.) A superficial glance now and then will result always in inaccurate drawing. The second aim in nature drawing is to have the hand record what the eye sees — to educate the muscles of the hand to express a thought.

These two aims apply to all kinds of drawing,¹ and may be so understood if not repeated in this text. Both could be accomplished as well by drawing jackknives, chairs, or handbags. But there must be another purpose in drawing from nature, namely, to open the child's eyes to some new beauty. This is

¹ The best reference work for nature drawing, or any other kind of school drawing, design, or crafts work whatsoever, is *The School Arts Magazine*, published by The Davis Press, Worcester, Massachusetts. Back numbers in the form of bound volumes may be found in many libraries. These volumes contain an almost unbelievable amount of material related to school arts and crafts. The text has been written by the best teachers in the country. The illustrations are reproductions of excellent work by children in all grades and the high school, art school, and college at home and abroad, and of the best arts and crafts work, drawing, painting, architecture, and sculpture, from everywhere. No matter what your drawing or design problem may be, you will find the solution in these books.

Portions of the text of this book, relating to drawing and design, and some of the illustrations, have previously appeared in *The School Arts Magazine*, and are here reproduced by permission.

the real purpose of nature drawing, for it surely includes all others. The world of nature is a world of beautiful things. "*We are immersed in beauty, but our eyes have no clear vision.*" Everywhere nature offers us enjoyment of the most uplifting kind, if we have eyes which know how to see.

The curve beautiful

In all drawing and design work the teacher ought to know the difference between a bent line and a beautiful curve. It is not intended that the explanation of curvature which follows should be presented as a whole to any class of children. This is background knowledge which is constantly needed as reference material by teachers. Teachers should be able to draw a beautiful curve, and they should be ready to show how an ugly line may be transformed into one governed by law.

Let us take a group of words — *a village, peaceful, serene, quiet, simple*. Think over the meaning of these words and see if you do not unconsciously frame other words during the process of thinking. The other words very likely will be *order, beauty, fitness*, because the race has learned by experience that the latter qualities are necessary to anything which is peaceful, serene, quiet, simple.

The beautiful thing is satisfactory because it is orderly, and back of the order, somewhere, there is the law which makes the order. Let us apply this

thought to the drawing of curves, that we may draw with understanding. It is manifestly impossible to draw well otherwise.

The problem of the beautiful curve is easily grasped. We will begin with the circle. (See Plate I.) A pencil, a piece of string, and three pins are all that is necessary for these experiments in school or at home. Have you these things at hand? The only real way to learn to draw is to draw! Place the pin through a sheet of paper, tie the string so as to make one continuous piece, pass the pencil through one part of the loop, and slip another part of the loop over the pin. Push the pencil as far away from the pin as the string will allow when pulled tight, and keep moving any way the string will permit. The resultant line will be a circle, governed by a very evident law, which is expressed in the usual definition of a circle. Now, if the pin pulls out, or the pencil slips, the law is broken, and that perfection which is the outcome of the reign of law is destroyed.

With two pins and the same string try the experiment of drawing the ellipse. The law is as easily seen as with the circle, but the movement of the pencil is governed by two centers, or foci. With three pins, the perfect oval may be drawn. These are the only curvilinear figures which we need consider in school, and any child in the intermediate grades can understand them as *lawful* curves.

All three of these curves are consistent in their

THE CURVE BEAUTIFUL GOVERNED BY LAW

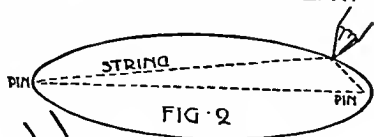
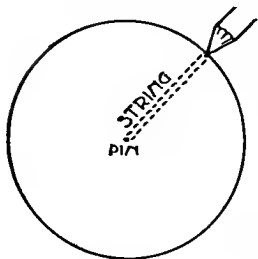


FIG. 2

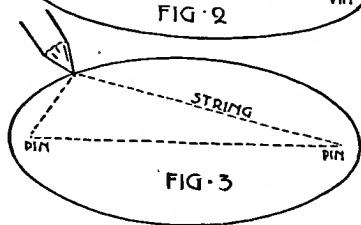


FIG. 3

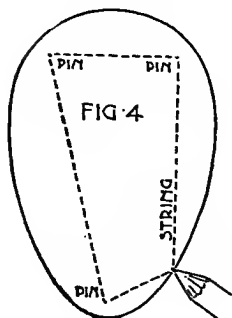


FIG. 4

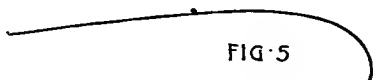


FIG. 5

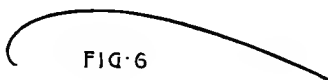


FIG. 6

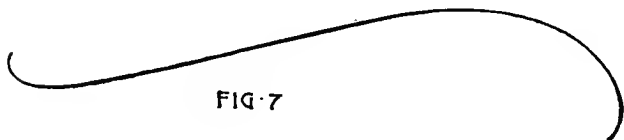


FIG. 7

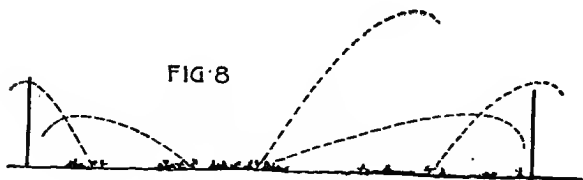


FIG. 8

movements. The circle is less interesting than the others because it is more monotonous. The oval is generally regarded as the most beautiful because it has more variety; yet remember always that this variety is entirely orderly and under the rule of law. Nature seems to understand this differentiation; the human head, body, arm and leg portions, the hand and foot, in the ideal are based on the oval outline, whereas hidden away in the cross-section may be found the circle. So it is with the fruits and vegetables, plants and animal life, also in the things made by man, as vases, capitals, domes, etc. The artist draws the oval head, the caricaturist draws the round one. The former is distinguished, the latter is commonplace.

Thus far we have discussed facts which are more or less familiar to all of us. Now we will pass on to the consideration of the beauty which may be in a single line. Figure 8, Plate I, is an illustration in miniature of a football practice field with the squads of players at work. Every now and then the ball goes soaring through the air, sometimes just skimming the earth, again shooting high above the players. It will be noticed that, whatever its direction, the line of flight is always of the same character. This line at first seems to be straight, so far as we can see; then, gradually, it bends more and more, until, apparently, all the vitality has gone from its movement, and the ball drops to earth. This is the experience which every

football might write if it could. It is started into the air suddenly and by a strong force which sends it upward, but the instant it leaves the ground another force, the force of gravity, opposes the force which generates its movement. Little by little the force of gravity overcomes the force or movement of the line itself; as the one weakens, the other seems to gain in strength, hence there is a continual change in the line's curvature from the beginning to the end. This produces a wonderful line, never repeating itself, always governed by law, and exquisitely suggesting the tempering of force through grace. A straight line indicates vigor and strength, a curve shows that another force has played upon the straight line to change and modify its force and intended flight. When we have in a line this combination of strength and force on the one hand, and of its gradual yielding to grace and delicacy on the other, we have the most beautiful curve that it is possible to draw. This is a curve which we *ought to know*. You cannot know it through a formal introduction, you must become intimately acquainted with it. Draw it with a free, swinging arm movement; the line is a free one, it cannot be drawn with a needle-and-thread movement of the fingers. Try it repeatedly; it will not be conquered at once, it is too subtle. With every trial, your understanding of the beauty of this line, and your interest and appreciation will increase.

This "Infinite Curve," as Mr. Ruskin called it, or

the "Curve of Force," as Mr. Bailey aptly calls it, is to be found everywhere in nature. It is the line which nature invariably employs when strength is needed, as in all upright growths. The drawings on Plates II and III are all made from plant forms. Notice how frequently this subtle curve appears. Look for it in these drawings as you would look for the hidden face in the puzzle picture. Later, in your drawings, select a plant form which is more beautiful than its neighbor because it has more of these curves in it. When you draw the plant use your best energy to reproduce these exquisite lines which nature suggests. You will note that I say "suggest," for oftentimes Nature only suggests perfection (as a matter of fact, as every artist knows, this is all that she generally does). It remains for us to accept Nature's suggestion and render the perfect line.

In object drawing, in the signing of an initial letter or monogram, in the outline of a picture or calendar mount, in the curve of a shelf bracket (see Plate IV), and all through our school drawing, if we are to produce results which completely satisfy, we must *know* the "Curve Beautiful."

Drawing from nature

It is quite hopeless to expect children to make drawings which may be termed beautiful when the sprays or plants from which they draw are commonplace, monotonous, or ugly.

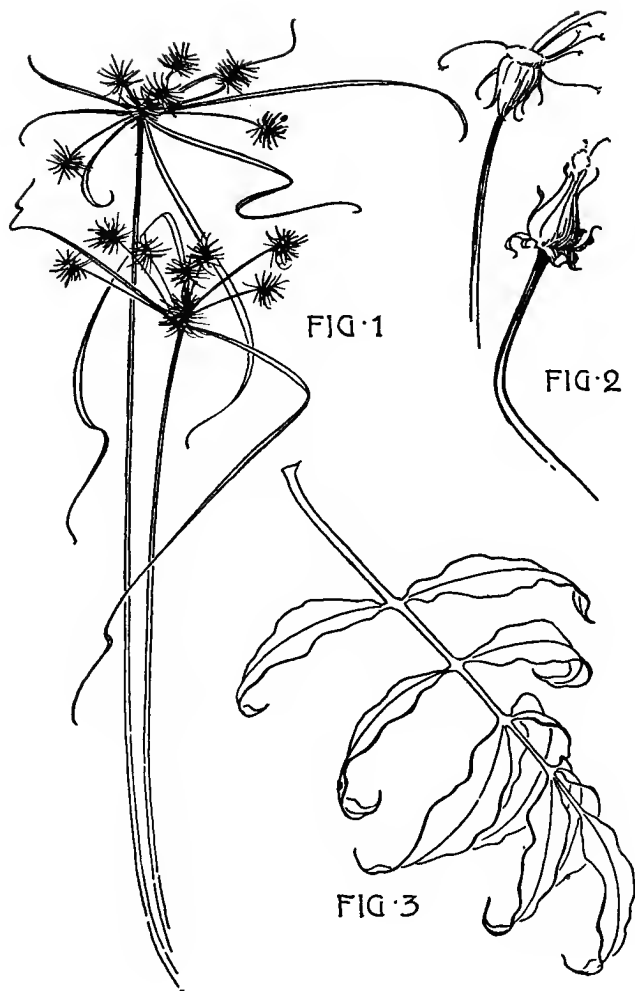


PLATE II

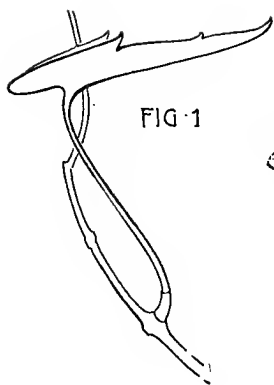


FIG 1



FIG 2

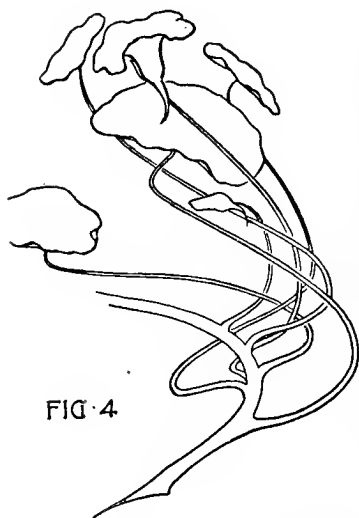


FIG 4

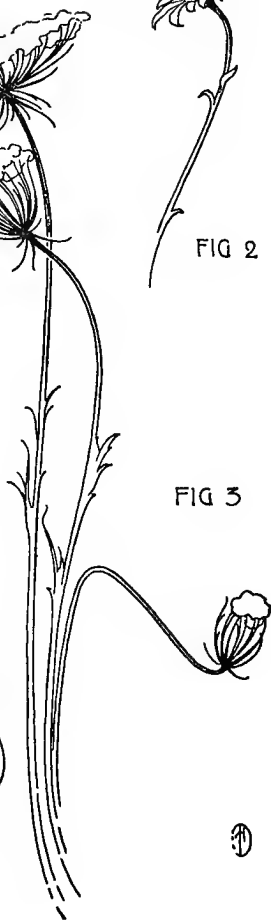


FIG 3



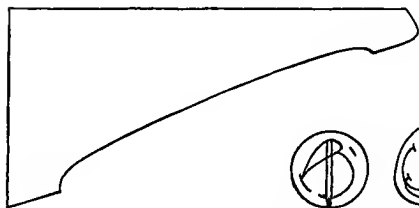
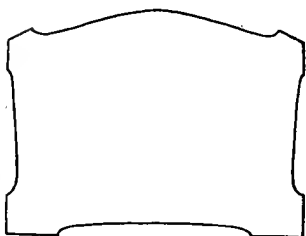
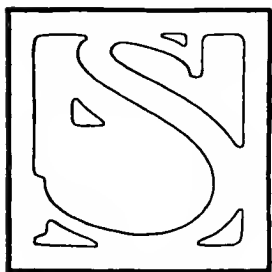
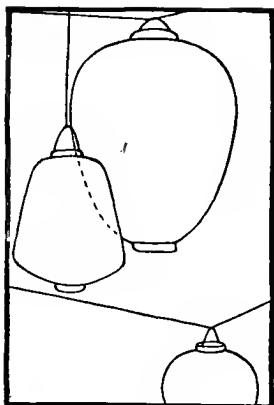
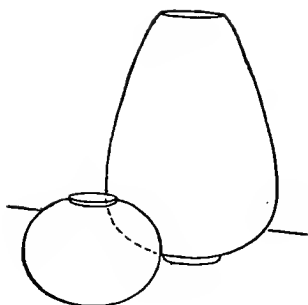


PLATE IV

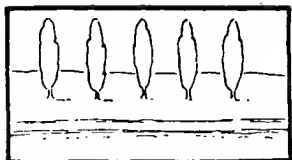


FIG 1

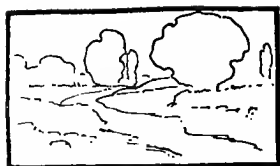


FIG 2

FIG 6

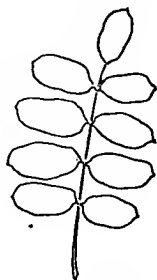
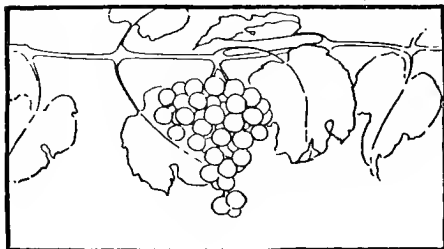


FIG 3

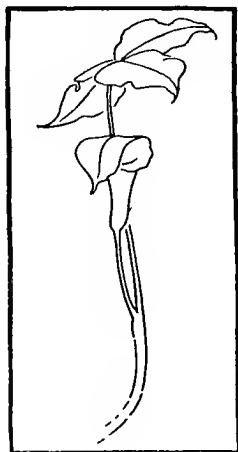


FIG 5



FIG 4



A drawing of trees arranged as in Plate V, Figure 1, gives a result much the same as that produced in music when one strikes at regular intervals but one note on the piano. In making an interesting picture, it is better to use several forms rather than to repeat one monotonously.

The artist would pass by a scene similar to Figure 1 and perhaps continue until he found a subject more like Figure 2, where the eye is not wearied by the repetition of one form at regular intervals. The child who brings to school a spray of the general character shown in Figure 3, is handicapped at the start. It is better to select a plant form which has variety in the size, shape, color, and arrangement of its elements. Such growths are abundant by the roadside; for example, woodbine, goldenrod, grapevine, seed pods, etc.

But little keen seeing is required to draw Figure 3. The child looks at one leaf, the others are just the same and are drawn from memory. Notice in the sketch of the woodbine, Figure 4, how varied are the leaves in size and position, how the stem changes its direction at every joint, how the berries grow singly and in groups, and if we are to work in color, how much more interesting is the varied color, — the green and red leaves, the red stems, and the blue berries, — than the repetition of the same leaf in the same color. Not only is the woodbine better when drawn, but the children will draw it better, because there is more of

interest to see. *The untrained mind always sees strong contrasts much more readily than slight differences. Therefore the wise teacher of children will see that the class has plants to draw from which offer bold variations of line, masses, and color.*

You may have watched a class of beginners in nature drawing. The pupils are asked to place their sprays on drawing-paper on the left side of their desks. This being done, a uniform movement is noticed all over the room—the pupils are “ironing out” their plants. Each leaf is carefully separated from its neighbors, all wrinkles are removed, and then with the palm of the hand, any remaining spirit which the plant may possess is quietly and firmly crushed. Perhaps some small boy, more discerning than the others, will slip his spray into a book and sit on the combination for a moment. All are working for the same end—getting their plants “ready to draw.” The results on paper will be so many maps of the vanquished plant, drawings without the life, vitality, grace or charm of the living things. Therefore, we should take particular care to avoid this artificial preparation. Keep the natural growth as nearly perfect as possible.

Place the spray upon the paper at the left (the shape and color are best seen when placed on paper rather than on the brown desk), so that the axis or general movement of the spray is vertical if an upright spray is to be drawn, Plate V, Figure 5, or hori-

zontal when the growth of the spray is from side to side, Plate V, Figure 6, as with the barberry or grapevine. This is very important and often not understood by teachers.

There are at least two reasons for this rather dogmatic direction as to placing sprays and drawings on paper. When we place a spray slantwise across a paper, the movement of the spray does not agree with the edges of the paper or with its axis. The spray is not orderly in its placing with regard to the given conditions imposed by the paper itself. We may hang a picture at any angle from an apple tree, and are not jarred by the result, but when we hang a picture upon a wall, it must have vertical and horizontal edges to agree with the conditions inherent in the room, the dominating lines of which are vertical and horizontal.

To be sure, plants sway this way and that in the field, — they are not generally vertical or horizontal; but when we put plant or drawing on paper we have to make nature conform somewhat to the artificial surroundings. Order is heaven's first law. Yes, the best of artists draw plants slanting on the paper; but notice, please, that they place an initial or spot of some kind where it opposes the movement of the plant axis, and forms a letter *V* or *A* of the entire drawing, and thus the *axis* of the whole becomes vertical. (Plate VI, Figure 1. See also Figure 2.)

Another reason which we should know is that nature's growths are balanced, unless thrown out of

balance by wind or other force. (Of course, we are now considering vertical growths, and the term balance is interpreted to mean that the plant is so poised that it would stand upright and not tip over even though unsupported by roots or other agencies.) You may observe this in tree, bush or plant. Try to stand so that you are tipped to one side. Is it easy? Why should Nature assume such a difficult position? She does not. One of her great laws is expressed in the word *balance*. You and I are balanced, Nature is balanced, we are familiar with ourselves and with Nature, and therefore we are not pleased with a drawing which is not balanced upon the paper. It contradicts our experience with ourselves and with Nature. Fine art never contradicts Nature, but it does always express Nature at her best.

There is always one principal element or group in any work of art — generally termed the *center of interest*. Look at any picture upon your schoolroom walls. Your eye will go at once to the center of interest. Ask the children to find the center of interest in each of the wall pictures. A good picture, or story, or room, or any other good work has one chief center of attraction, never two or three. The eye and mind cannot see two things at one time. When two forces are equally attractive to the eye, or when no one force or spot is more attractive than the others, we look from one thing to another in a distracted state of mind. We find no rest, no satisfaction.

Nature seldom gives us good composition; that is to say, Nature rarely gives us *one* perfectly satisfactory center of interest. Where Nature fails in this particular, the teacher must help. For instance, in our drawing of a spray, or group of sprays, we may avoid having two groups of foliage of the same size and importance (two centers of interest) by picking off a few leaves from one of these groups. The eye is further helped to rest with ease and pleasure upon the dominant group if we emphasize it in some way, as by drawing it even more carefully than the other parts, and with stronger lines or colors. (Plates II, III, V, and VI.)

If the drawing lesson is planned, and not a mere "happenstance," we have selected a plant to draw because there is something about it which interests and appeals to us. Whatever that something may be, its lines, masses, method of growth, or color, let us seize upon this characteristic, never lose sight of it, continue to exalt it in our imagination until its importance really increases. If we are to draw the nasturtium, the superb purity of the color of the flowers and the swaying grace of the stems must dominate the mind of the school artist, otherwise he will gabble of wrinkles, veins, and wormholes. He sees not in the true relation of importance.

Let us set apart five minutes at the beginning of the lesson, five minutes for brushing away the haze which interferes with our first seeing, five minutes for concentrating the attention upon the elements of interest

and beauty which have caused us to select this plant as a model. This is best done through the teacher's drawing or painting, made before the class, with pointed comments. (The teacher who talks through the first twenty-five minutes of a drawing lesson and allows the remaining ten minutes for the class to free itself from her monologue, is oblivious to the fact that the program calls for a drawing lesson.)

Let us single out the important thing we have to say in pencil or color, then say it distinctly, keeping other things quiet. I have never known a pupil in the grades instinctively to express himself through drawing and show things in their right relationship, in the right order of their importance. Without the guidance of the skillful grade teacher, children's drawings stammer incoherently. The method is the same as with a reading lesson. When a child drones through the sentence from the book, what does the teacher do? She shows him. Very well; do the same thing in the drawing lesson, only use a pencil or color to show him.

To show the entire class, paste together three or four sheets of nine by twelve paper to make one large sheet. Then the teacher should make a drawing large enough to be seen from all parts of the room. (See Frontispiece.) This is a cheaper method than to have her make a drawing on six by nine paper, and supply opera glasses to the children.

In drawing leaves, particularly foreshortened leaves, always draw the midrib first. (Plate VI, Figure 4.)

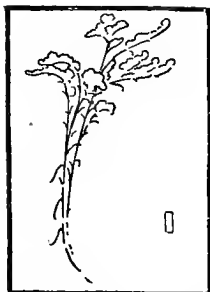


FIG. 1



FIG. 2

FIG. 3

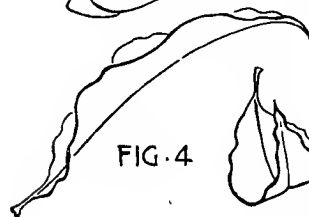
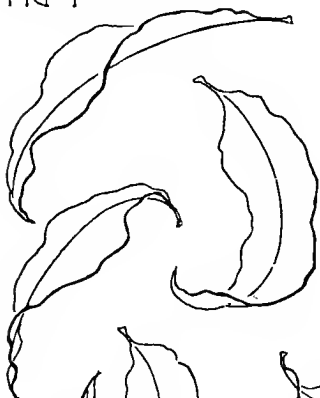


FIG. 4



No other vein should be drawn by children. The midrib is the backbone of the leaf, and the edges of the leaf on either side are not difficult to add. The near edge should be drawn first.

The pencil is a good medium to use when we want accurate drawing of details. Colored crayons are rather better than water-colors for large classes of little children; that is to say, the average results will be better with crayons. In the fourth grade and above, water-colors may be well handled. Brush and ink is an admirable medium to use when the aim is to get the general mass and movement of the plant. Children naturally draw in outline and fill in with color. Sometimes, however, where a mass of color is our chief aim, as in goldenrod, it is better to paint directly with brush.

As to method again. The children do not read a story and bid it farewell for the year. The same story is read several times. So it is with drawing. Try one kind of plant several times. Interest may be maintained by varying the medium of expression from pencil, or ink, to color; by drawing with the class one lesson, and not the second; by having half the class work at the board; by drawing the details this time, and the full spray next. Before you have finished with this one growth, the class will know how to draw it from memory, which is an excellent final lesson to attempt.

The drawing of a dandelion

We have spoken of training the eye to see. By correct seeing, we mean seeing correct relationships, the exact shape or color of one thing compared with another. Successful teaching of drawing implies a constant effort on the part of the teacher to induce her pupils to see beauty. An artistic way of doing anything means a beautiful way of doing it. Let us take a concrete example, a lesson with the dandelion.

We rejoice in physical perfection in life of any kind. Let us select the tall, vigorous dandelions, those with a superiority of mien. We draw the dandelion because of the flower upon its sturdy stalk, but we want the accompaniment of the leaves. We must look to it that the leaves and stems of our plant move together with regard to their general swing or direction. This arrangement to produce a consistent movement is the first thing to work for. Our paper is vertical, we must not forget that. The movement of the plant should agree with that of the paper (Plate VII), else there is discord at the outset.

The leaves must not subordinate the flowers of our dandelion. We will award the flowers the vantage point of supreme interest. The most direct way of doing this is to draw more lightly the lower stem and leaves, making a constantly increasing strength of line, of color, or of both, as the eye travels toward the supreme center of interest, the flowers. The eye is

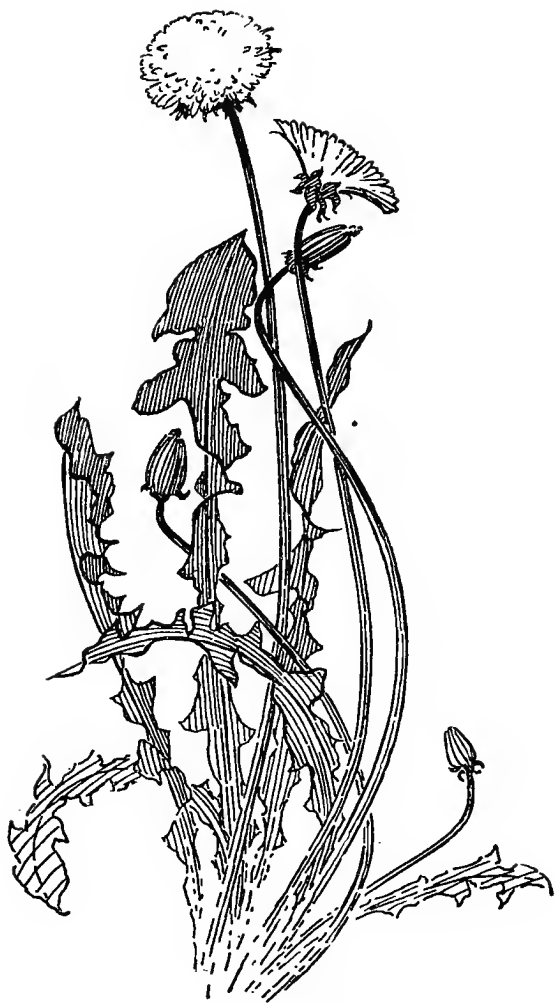


PLATE VII

attracted by the stronger values, as the ear by loud sounds. It will leave this attraction for short periods only; it will always return. This is a simple plan of emphasis and subordination, easy to understand, but for some unknown reason difficult to teach so that pupils will follow it.

Now the problem is to see with yet more understanding. We have the plant arranged on our desk so that the lines are in a consistent, rhythmical relation, one with another and with the paper, and we have determined to subordinate the stems and leaves for the complete and unhampered enjoyment of the flowers. Let us begin to draw by at once attacking the real subject, the flowers. It is a mistake to waste one's first and best energy dilly-dallying around with unimportant parts. We will go for the essentials first; other things will then find their rightful place. The master workman always sees things in their true perspective, he gets directly at the essentials in a masterly way.

We cannot draw all the petals, nor do we want to do so. We want to suggest just enough to be sure that the mind fills in the rest. Art must always be suggestive, it must stimulate the imagination, otherwise it remains uninteresting, because it leaves nothing for the observer to do. The petals, even in this humble flower, are so closely and so wondrously bound together at the center, that it is our despair to suggest their movement; but that is just what we must try to do, that is all we can ever hope to do.

Next will come the green sepals with joined hands dancing around the stalk. Let us not lose the grace of them; they are exquisite.

Now the sturdy stalk with its superb curves, just strong enough to do its work. If we make it a sixteenth of an inch too large or too small, we shall know it. Such a stalk it is, increasing in diameter and power so gradually that the eye is mystified to find any place where there is any change, and yet the change is constant! Not like a worn-out hose pipe, but always firm, clear-cut, and true. Here, indeed, is a test for our skill of hand! Nature has done her work well; it is a challenge!

Each leaf is dependent upon its backbone as much as we are upon ours. Let us think backbone and draw backbone, that our leaves may have the virility of those of the plant which stimulates our efforts. The little arrowheads in the leaves twist this way and that way; all are alike and yet all are different. Each has a character of its own, and all have the look of the dandelion family.

Those parts of the plant which are the nearest we will make with the strongest lines, thus suggesting planes of distance. Very simple, but again difficult to teach so that the pupils will do it.

Finally for the better understanding and enjoyment of our drawing, we may color it. In the fields the dandelion springs up in fullness of color. If we want to emphasize the color, we shall paint it in as

rich color as we can use around the center of interest. As we leave this center, our color should, like our lines, become quieter and less attractive. There is another way to color our drawing. If our aim is merely to add to the attractiveness of the drawing and to differentiate its various parts, we should subordinate color to line. The yellow should be subdued (with orange and black or blue), and the green dulled with gray. The common element, gray, will then enter into both colors and bring them together, thus producing a more harmonious effect with each other, with the gray pencil outline, and with the paper itself. Both methods of coloring are right, it all depends upon what you want to say.¹

ILLUSTRATIVE DRAWING

Illustrative drawing may be taught in connection with any other school subject at any time of the year. It is evident that we cannot consider a fraction of the possible drawings here. Let us take one and understand that the process is the same with all.

Probably midwinter offers the best time in the year for successful landscape-and-figure illustrative

¹ The colored-crayon box generally contains red, orange, yellow, green, blue, violet, and black. When white is needed, blackboard chalk is used. Many schools use successfully the three-color box of water-colors. I believe that less haphazard and truer work can be done with a box which contains red, orange, yellow, green, blue, violet, black, and white. The colors should all be as pure as possible. Sometimes we want pure color, although as a rule the color we need to use is grayed.

drawing in any grade. The sky remains as in summer, but the ground becomes a much simpler matter, merely a flat area of white. In any drawing where there is an abundance of detail, colored crayons will average better results than water-colors; their technique is less difficult.

Suppose we take a typical subject, "Sliding downhill." Our first lesson should be planned to inspire the children with a strong desire to do a little better than their very best. How does the teacher of reading do this? She reads to the class with the very best expression of which she is capable. The wise drawing teacher will draw for her class, and will draw with the same leadership she employs in her reading.

You may say, "Always teach imaginative drawing this way? Why, it would mean for the children nothing more than copying!"

You are right. They should not always copy; but at the beginning they should imitate far more than they are generally allowed to! At the start of mid-winter illustrative drawing, the children need positive help in drawing sleds, barren trees, skies and hills. When they have learned to draw these elements of winter scenes, they are ready to use them in original pictures, as they use familiar words in making original stories.

We will draw a picture of the greatest coasting hill in our neighborhood! We will have the sky blue and the ground white, and the trees in their cold gray win-

ter garb, and the hill overspread with coasters. We will make a large drawing (at least sixteen by twenty inches), on paper pinned to a side wall where all the class may see our progress. The children work at their desks while we work at the board. All are to use gray paper. We begin by drawing the large hill with white blackboard crayon, making all the lines of the hillside radiate from the top. This suggests the truth concerning the tracks in the snow, and also suggests the perspective, the convergence of lines toward the distant point. Next, we add the distant hill at the left; distance increases the strength of the white, hence we use a little less white on this hill. (Plate VIII.)

The second step consists in putting on a nearly flat gray-blue sky color. It will be noticed that this drawing is made on gray drawing-paper. The gray will show here and there through the snow and sky, adding to the effectiveness of both. Putting on the sky color requires method. It must be put on with short, even, light strokes of the crayon, much as if one were using pencil. The point should be used rather than the side of the crayon, as the latter produces a fuzzy, woolen result quite unlike the flat area we desire. It will be noticed that the sky appears slightly darker near the horizon. This is due to the effect of contrast with the white snow in nature, and, recognizing this natural effect, we are aided in differentiating land and sky.



FIG. 2

FIG. 1

FIG. 3

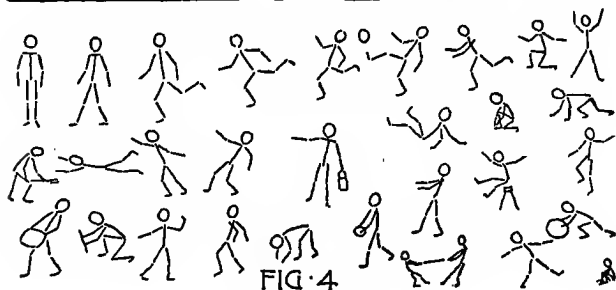
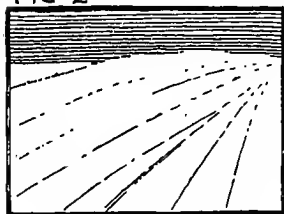


FIG. 4

With the same blue crayon, we lightly suggest the trees and stone wall or fence on the far hills; remember they are away back. Keep them light in value! Again, with the same blue (perhaps with an additional touch of violet), we draw the house and trees on the distant part of the large hill; all these will be a stronger blue (or violet) than those in the extreme distance. And finally, with the same hard-working blue, begin to add the coasters, mere specks in the distance, growing larger as they come down the hill towards us, and growing plainer, that is, darker in value.

It may be well here to make an abrupt change. An artist puts on his canvas, as guide-posts, wherever they should be, a spot of color which is his highest light, another for his strongest dark. We may at once move into the foreground and draw in full color several figures. Now we have our guides, these large, strong figures in front, and many small figures and groups in the distance. All that remains is to grade in size, in value, and with constantly weakened color (all colors as they recede into the distance grow weaker and bluer) all our figures from those in front to those in the distance.

We shall want the same blue for two more things in our picture. With it we may draw the ruts in the snow made by the sleds and the footprints. An effect of reality is given by suggesting that there is a sun in the heavens. Children will respond animatedly to this thought by drawing a large, greenish-yellow disk

over the blue sky, from which there are shooting darts much akin to shooting pains in the head. There is a better way. It is not necessary, nor is it possible to draw the sun successfully. If we decide where we think the sun may be, we can show it is there by drawing the shadows which the represented objects in our picture would cast. This is very simple, if we remember to keep the sun in the same imagined place in the sky. Note that both the ruts in the snow and the shadows grow weaker as they recede from the eye. These simple things are what give "atmosphere" to a picture. (This drawing is not shown in color; therefore the reader will have to picture the figures and sleds in the foreground as being drawn in full color, those halfway back in half color, etc.)

And now it is time to see what the class has been doing. "Oh, what drawings! I never could teach illustrative drawing." But, my dear teacher, you probably have done all that anybody could do in one lesson. It has not been possible to teach any one thing thoroughly. We need more time and practice. The children are willing. They have seen what they may do if they will but learn how; and they are eager to drill on the necessary details of rendering.

On small pieces of gray drawing-paper, we will learn to draw hillsides with the strokes made in the right direction. On other paper we may practice making skies that are perfectly flat. (Figure 2.) At another time we will draw both; and later we may

add the distant blue trees and figures. (Figure 3.) All this time we are learning picture words. It will be necessary to take other lessons and teach action in figure drawing. One good way, surely, is to draw skeleton figures in action (Figure 4), and when these have been mastered, we may clothe them in winter garb. Finally, we return to our first drawing problem, and make the entire drawing. Save the first attempts for comparison with this ultimate product.

We have now paved the way for other winter illustrative drawing. Perhaps there is no more delightful method of teaching the effects of distance than by means of these winter sketches. At a glance we see that distance decreases the apparent size of objects, and decreases their value or strength of color. These two principles form the platform upon which the whole theory of perspective may be constructed; in fact, one might almost say that they are the whole of perspective. Children in the first school year can answer such questions as these: "Why do these people seem so small?" (Indicating those in the distance.) "Why is this girl in front drawn in such strong color?" "Why is that one away off there drawn so lightly?" "How about the trees?" "How can you tell in a drawing which of these two trees is in front of the other?" Neither children nor adults ordinarily see these differences in color or value in their daily round in life, but any one can see them in a drawing correctly made. It is necessary to call attention to the particular

points which we wish to have carefully observed. Answering such questions as those suggested above, focuses their thoughts to specific, essential features. The glib replies from the children are misleading — to us. The answers made through the spoken language are correct; it seems as if they understood and could apply their knowledge in their drawings. But they do not. The application of this wisdom must be carefully looked after at each step. Be it said in passing that the same general principle holds with adults.

No one method of presentation will serve to teach illustrative drawing. Sometimes the children draw alone; sometimes the teacher draws alone; sometimes the children express their ideas as to how their thought ought to appear in a drawing, and the teacher follows with a better expression; and again, the teacher leads all the way through, step by step. Such an illustrative drawing as we have considered is not difficult to make, if one constantly bears in mind certain facts of appearance. The sky is blue, all blue; snow is white, all white; ice is gray-blue, flat and cold; a distant mass of trees is seen as a mass, not as individual trees; houses are painted all over, one color, sidewalks are one flat color, etc.; and all these things are subordinate in value and strength of color to the active figures which are to be found in all illustrative school work; they all serve as a setting or background for life.

Children *can* draw these pictures, they can draw

them astonishingly well. It all depends upon the teacher's ability to lead the class by means of her own larger drawings. Do not worry about robbing the child of his individuality; rather ought we to concern ourselves with giving him the ability to express himself coherently. Let us teach every lesson.

ANIMAL DRAWING

Any teacher can learn to draw the simple animal forms generally taught in school. As with all other drawing work, the teacher must know how to do the thing she is to teach.

Everybody who has tried it, knows that the attempt to have the children draw animals from live specimens results in a large measure of failure. The problem is too large for the beginner to grasp. Indeed, the children will do as well as a class of adults when the lesson is presented in this manner. If there has been no teaching, why should we expect good results? A class of any age is not expected to know what it has not been taught.

All artists in any line are copyists at first, but blind copying of anything without method or understanding is of but little value. Show a child how to do a thing and he will probably do it; tell him, and he will probably misunderstand, or fail to grasp your entire meaning.

There is a prevalent opinion that one who draws can draw anything. This is erroneous. Because an indi-

vidual can draw a cat in most approved fashion, it is no proof that he can draw a hippopotamus. He must learn to draw the latter as he learned to draw the cat. Of course, the more he draws, the easier it will be for him to draw new forms, but each must be learned before it is known. Undoubtedly some animal forms are easier to draw than others. Perhaps the easiest is the chicken; then follows the rabbit, turkey, fish, rooster, hen, duck, birds of characteristic pose, color or shape like the woodpecker or heron, and then the elephant, camel, giraffe and cat, or other animals having striking characteristics of form. Among the most difficult is the dog, which is often tried first because it is an easy model to bring into school.

Now for the first actual drawing lesson with teachers or pupils. Let us commence with the chicken. All drawing is but an attempt to make lines or spots which will suggest or recall to the mind of the spectator the real object. Hence in this animal drawing the use of color is an important adjunct. The teacher may draw at the board with colored chalks, the pupils are to use their wax crayons at their seats. Draw as a yellow mass, a nearly horizontal ellipse, almost a circle. (Plate IX.) Add to this a small circle for the head. Suggest a peak for the tail, and the beginning of the legs under the body, back of the center. Now change color and use orange to draw the short bill, the eye, and the legs and feet. Note that the legs of all fowl and birds are sprung backwards, ready to

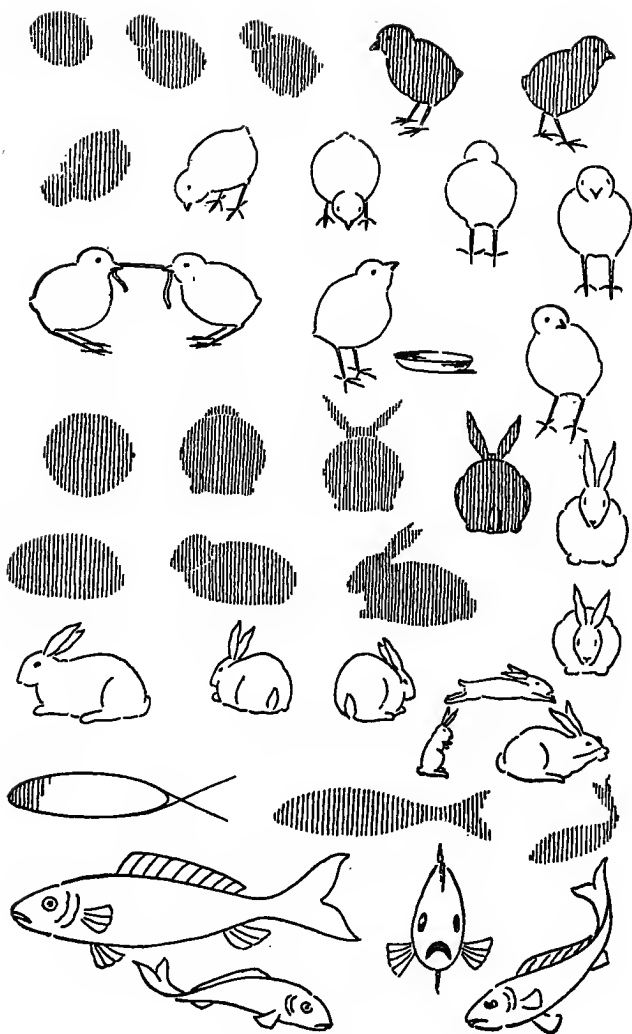


PLATE IX

push the body forward at once. Almost always, beginners draw the legs vertical, like stilts. The feet are larger than you have imagined them to be unless you are a good observer, and there is a spur in back which acts as our heel on the ground, or as our thumb when taking hold of anything. Draw this chicken several times. Try it in the same position, but facing the other way, always drawing the masses first. The reason why better results are secured in this case by mass drawing, is that the chicken impresses us as a fuzzy mass or ball, rather than a thing of distinct outline.

We are now ready to draw the chicken in various positions. There is nothing new, only a rearrangement of the same elements. If we want the chicken pecking at something on the ground, we incline the body, and place the head low down. The back or front view is begun with a circle for the body as well as for the head, and the drawing of the details of the head and feet make it face away from or toward us. Two chickens pulling at a worm always pleases the children, and the energy of the action rests almost entirely in the position of the legs which are decidedly inclined. A chicken drinking holds his head high for obvious reasons.

It must be evident that there is nothing difficult in the drawing of a chicken. Try these drawings several times and you will have mastered them. If you would complete your education in the drawing of

chickens, draw from live ones. The method followed in teaching children is the same, first store the mind with the essential characteristics of the form by means of intelligent copying, the teacher and class working together. Follow this whenever possible by work directly from the live form. In this way one is not at first overwhelmed by the many details of the subject, and the new element in drawing from life is merely that the animal itself suggests the problem instead of the copy from which the drawing was first done.

In drawing the rabbit the teacher will use white chalk at the board and the children will use the same medium at their seats, working on gray paper. The back view is the simplest. First, make a circle, a mass of white chalk scrubbed on lightly. Then add the bump at the top of the head, a knob on each corner for the hind legs, and two long, somewhat pointed, elliptical masses will serve to suggest the ears. With stronger strokes we will outline the drawing, indicating the position of the hip joints and making a wad in back for the tail. The ears should be drawn, not as rigid ellipses, but with a waving line.

A slightly different drawing of the feet, discernible at a glance, and the egg-shaped outline of the head will serve to turn the rabbit around so that he faces us. Indicate the nostrils, and the small ellipses show the position and shape of the eyes. The head may be raised or lowered at will, as shown.

The side view presents no formidable obstacles, if

drawn in mass. If the attempt is made in outline, as it always is when made unguided, the task is similar to that of drawing a map by beginning at one corner and continuing around until we return to the starting-point, — also like trying to draw a pig with the eyes shut, a former social pastime. But, to return, the rabbit is associated in picture and story with Easter time. So is the hot cross bun, and all may be correlated with the drawing of the side view of the rabbit. We will begin by drawing with the side of the crayon a hot cross bun, at the front of which we will attach an egg. The same elongated irregular ellipses which we made in previous views will serve for the ears, and the tail and front foot are added as shown. With the point of the crayon we may now correct and emphasize the outline. Beginning at the top of the head we will show the bend in the profile of the face where the forehead seems to end and the nose to begin, continuing the line down to the curve of nostril and chin. Then come the ears, one behind the other, the slight curve at the back of the head, the arched back with its peak a little back of the center of the entire length of the rabbit, the slight indentations where the hip bones come, the tail, the two legs and feet, and the line of the upper part of the hind leg against the body. The characteristic position of the rabbit should be marked by this time, its habitual position, a crouching one, very unlike that of cat or dog, and this precludes the drawing of legs, which

are difficult to draw in any animal. Try the same drawing turned around the other way. Then try the other positions shown.

We may try other attitudes, snap-shot positions in which a few details are changed to indicate varied movements. The only change as the rabbit washes his face is in the position of the front paws; the rest is identical with our profile drawing and done in the same manner. If you want to make him run, stretch out his legs to an almost horizontal position. Let us not forget that the mass must come first in each drawing, the details and outline last.

Children and adults find difficulty in drawing the fish because the two main masses are not seen distinctly. The body is elliptical and the tail is in the form of a letter X. Draw these two in outline first to make sure that we see this relationship. Fill in with the side of the crayon, making the tail with a more flexible line than that in the X, and we have the characteristic contour of the fish. Use crayon of orange color.

At this point experience has proved that it is well to take time to draw slowly and with care the various details. We will do this in outline that we may understand their position and formation. Commence the fish with a lightly drawn ellipse and X. Draw the line for the top of the head, the back and tail, and continue along the under part of the body. The mouth of a fish is never indicative of any but the most morose thought,

a sad gasping for breath, drawn with depressing, downward lines. The eye is large, glassy and round, and the gills are arcs of larger circles, having a waving character of line. Immediately back of the gills is generally placed one fin, drawn somewhat as a fan is drawn; beneath this is another, similar, but curving slightly backward in its every line. Still farther back is a third fin, with lines pushing back more in the direction of the main body lines.

The fin which springs from the top of the back is nearly parallel to the backbone. It is supported by bones which incline more and more as they approach the tail. These details are in general common to all fishes. When we have learned them we may begin practicing drawing fishes in more interesting positions. Try swinging one around in a curve toward us. First comes the mass with one or two sweeps of the crayon; the details are added much as in the side position. Finally, we shall, of course, want to be able to draw a fish in full front view. Here we have the oval mass, the four fins, and the same sad facial expression.

For the final lesson on the fish, place the school aquarium, or globe in which fishes are swimming, where half the class can see it, and allow the children near to draw freely from the fishes as they swim about.

Any other required animal may be learned, or taught, in like manner. Space here will not allow the consideration of others. Rarely do time and other drawing work allow the teaching of more than one or

two animal forms during one school year. To sustain the interest of the class, draw a chicken coop or yard or the side view of an aquarium on the board, and by pasting the children's drawings to the board, complete the picture with the suggestion of the live forms in their home surroundings. This may be the final work for the year in animal drawing, or the children may use their new drawing words to make Easter cards or other designs in which the animal form is appropriate, or in illustrative drawing.

OBJECT DRAWING

Grades I-IV

Object drawing offers further experience in seeing and drawing. Where the primary grade drawing schedules are made out with due regard to the seasons and national holidays and customs, the plan is often something like this: September-October, nature drawing; November, fruits and vegetables, Thanksgiving; December, Christmas work; January-February, object drawing, Lincoln, Washington, valentines; March, birds, chickens, etc., Easter, early spring growths; April, May, and June, buds and flowers, design. Illustrative drawing, applied design, lettering, color, picture study, and correlation with other subjects are introduced where needed.

According to this schedule, object drawing comes in January and February. This is the time when interest

is at its height regarding Christmas toys. There are no better objects for children to draw. They have decided characteristics of shape and strong color, the two requirements which we have discussed as being necessary for untrained eyes, and there is no question of interest. Avoid drawing from such subjects as the wooden sphere, cube, or cylinder, once considered as being of prime importance in primary drawing for the purpose of teaching principles. As with English, it is too early to mention the grammar of drawing. If the objects happen to be cylindrical or cubical in shape, place them on a level with the eyes of the children, that perspective confusion may be avoided. In all drawing lessons where the class is asked to draw from a given thing, it is obviously necessary that the object be large enough to be seen clearly from all parts of the room. The teacher should walk to the back of the room to make sure that all the pupils can see definitely what they are asked to draw. To err in this respect is not uncommon in classrooms.

Draw with colored crayons (and white chalk where necessary); such objects as a sail-boat, a train of cars, a horse and wagon, a fire-engine, or an automobile are unsurpassed as models for little children. Real seeing of constantly changing form and color is required. At Thanksgiving time draw fruits and vegetables associated with the holiday festivities, oranges, bananas, pumpkins. Large drawings may be done, if desired, with water-colors, although the colored cray-

ons are generally preferable in these grades. Now and then make pencil drawings without color, and again color the pencil drawings. Let us always bear in mind that little children need much encouragement and help. The teacher should draw with the class frequently, remembering, however, that the ultimate aim is to teach the class to work freely and independently.

There is nothing new to add as to the method of presentation. Follow the same plan as with nature or illustrative drawing. Have a part of the class draw upon the blackboard, among the advantages of which are added interest, variation of medium employed, and opportunity for class criticism and correction. After drill upon one object, draw it from memory. Then use it in illustrative drawing, as a boat sailing upon the water.

Grade V

The common fruits and vegetables are suggested for study, singly and in groups, also objects having characteristic outlines, as shovel, rubber boot, hammer, pitcher, ink-filler, globe, and mounted birds.

Here may come the first definite study of a perspective principle in object drawing. *In a group of objects upon a horizontal surface below the level of the eye, the nearer object appears the lower.* As a result of many drawings of two or more objects in groups, the children will come to know this principle through their experience in drawing.

It is a very common mistake in drawing (and other subjects) to believe that when we have taught the statement of the principle in words, we have taught the principle. This is a very grave error.

A good agent for any system of writing can state the principles of good penmanship, yet he may be a very poor writer. The card writer at his desk on the street corner cannot formulate in words the statement of a single principle which he daily uses. How about the carpenter, the plumber, the dressmaker, or the housekeeper? Do they first learn in words the statements of the principles underlying their occupations? Of course not. Few of these experts ever attempt to summarize in words; they say, "I'll show you!" That is sufficient; they do not know the adequate expression in English, and, as a matter of fact, they do not need to. They do real work, and their work is not talking. They know that the concrete must come before the abstract. The statement in words of any principle is always an abstraction, really comprehended only when resulting from many concrete experiences.

So let it be understood that we can really learn, and therefore comprehend, the principles underlying any art or craft, profession or business, only through concrete experience many times repeated. We admit that we may learn to state in words the principles of any form of art or craft expression, but these abstractions never alone made a skilled worker. Probably most teachers can state the principles of convergence, but

few teachers can draw a house in true perspective. Therefore, with regard to the object drawing for this year, we have a —

SPECIAL NOTE: Please bear in mind that this principle, namely, *in a group of objects below the eye, the nearer appears the lower*, can be learned *only through making correct drawings* which illustrate it. Teach this one principle through its use this year.

As all our object drawing in elementary schools is done from objects placed below the eye level, the principle may be stated briefly, as, the nearest objects in a drawing appear lowest. Is not this a simple statement? Apparently any fifth-grade pupil can understand it in words. Place two or three objects where the application of this principle may be seen; without comment, ask the children to draw the group. A large proportion of the class will not apply their word knowledge. They understand the words, but not their significance as a whole.

It is our business as teachers, just now, to see that they learn to draw, not to talk about it. Let us solve several drawing problems.

Problem 1. To draw one apple behind another. The teacher draws lightly, upon the board, a circle, swinging round and round, one way, then the other, until a good result is obtained. Then she carefully goes over her best result line with a clear, heavy chalk-mark, adding the depression and stem to suggest the apple. A series of light horizontal lines above the ap-

ple, made with free whole-arm-movement lines, will indicate the back edge of the table. This may be left light and rather suggestive as it is in the background. Now ask the pupils to copy this drawing, working in the manner employed by the teacher. When this has been finished, ask the class to place in their drawings another apple farther back on the table. When done, the teacher at the board will draw the right answer to the problem. She will draw a second circle as lightly and as freely as the first; drawing the whole circle as if we could see through the first apple, and finally selecting the best outline for the circumference of the second apple, erasing, if desired, the part of the apple which is behind the first. The outline of the second apple should be lighter than that of the first, as it is farther back, and the line for the back of the table should be the least conspicuous of all. (Plate X.) The children may now exchange papers, and, aided by the teacher, each child may correct the paper in hand, giving it a final mark, as with arithmetic problems. Those drawing at the board may follow similar practice.

Problem 2. Here is a drawing of two apples (Plate X, Figure 4), made as if of clear glass. Something is wrong; can you copy this drawing and make it so that it looks right? Exchange papers, correct and mark.

Problem 3. Here are two unfinished potatoes. (Figure 5.) Complete the drawing so that one potato seems to be behind the other.

FIG. 1

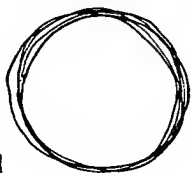


FIG. 2

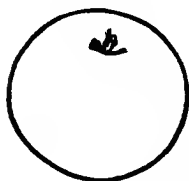


FIG. 3

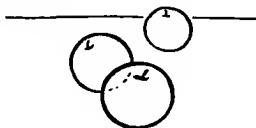


FIG. 4



FIG. 5



FIG. 6

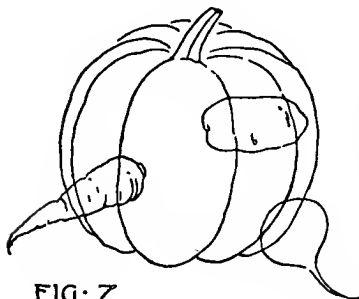
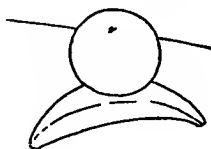
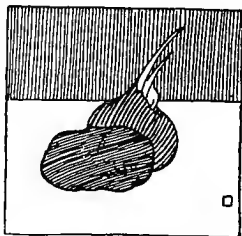


FIG. 7

FIG. 8



Problem 4. Something is wrong with this orange and banana. (Figure 6.) Can you fix it? Answer in your drawing, don't tell me!

Problem 5. Here is a queer one. (Figure 7.) Can you straighten out this confusion?

Problem 6. Have children state the problems; for example, "Draw a carrot in front of a potato"; "Draw a lemon in back of a pear," etc. Drill, drill, drill!

In all object drawing there are a few errors which are bound to appear in any school class. They come as surely as taxes, and we must as carefully plan to meet them, else we shall pay interest in the form of time and patience. Without question the mistakes are those requiring keener vision than is possessed by most boys and girls, or adults, — little things that require subtle seeing. As an illustration, the eye does not see that the distant end of a book appears shorter than that immediately in front of us (try it), or that the lower ellipse on a spool seems wider than that at the top, or that the apple behind can be seen less clearly than the one in front. We can see these things in a drawing or a photograph, but our eyes are not sharp enough to see such slight differences in small objects.

One who draws correctly knows that certain things must be done to produce certain results or effects, and in large measure he does them because of this knowledge. For, after all, the drawing of any object is but the attempt to convey to another the idea or impression of the thing drawn. So many people believe that

drawing is an imitation of the thing drawn. It is not. When we draw a potato, we do not try to imitate the potato; we try to suggest it by outline, mass, or color, one or more, so that our presentation shall call the original to mind.

At the beginning of the teaching of any principle, let us forestall these expected errors by problems like those given above, and by reference to other drawings or illustrations. This suggests another problem sheet.

Problem 7. Cut from magazines pictures which show that the nearest objects are the lowest. Mount these illustrations upon a sheet of drawing-paper and label the sheet properly. Now have each pupil, with pen and ink, mark the lowest edges of several objects in each pasted illustration. In this way the child sees how some one else has known and used this principle. His attention is focussed upon the particular thing we are trying to teach him. He records the facts with his muscles, and the teacher may know that the child understands what he is to look for.

Problem 8. With the experience thus gained through drill, we may proceed to draw from real objects. The children now bring to their groups an understanding of what to look for, and how to express what they see.

In all object drawing use soft, or medium-soft, pencils (when pencils are used), and insist that they be held freely three or four inches from the point. A cramped position of the hand prevents the worker from seeing the whole of his drawing; it precludes the

possibility of free drawing with light lines. Keep the papers with edges parallel to the edges of the desk. Pupils are prone to tip the papers as when writing. It is very difficult to get vertical drawing on slanting papers. Spend considerable time in making quick sketches, three or four objects or groups being drawn in one lesson. After much experience in drawing with pencil, wax crayons or water-colors may be used to add interest and attractiveness. The strongest color should be used upon the nearest object, as with pencil outline. The background may be a flat area of quiet color. (Figure 8.)

Grade VI

Thoroughly review the principle taught in the fifth grade. Conduct this review by problems in drawing as suggested. The new principle for this grade is, *A circle viewed obliquely appears as an ellipse*. With the top of a waste-basket show the class that a circle appears a straight line when one looks across the top, and as a circle when one looks squarely into the top. It appears as an ellipse when looked at obliquely.

Show the class how perfect and beautiful a curve an ellipse really is, by using pins and strings as described on page 166. There are no corners, the two sides are alike, and the opposite ends are duplicates in shape. After such illustration, practice free hand on board and at seats, making the series of ellipses ranging from a straight line to a full circle. (Plate XI, Figure 1.)

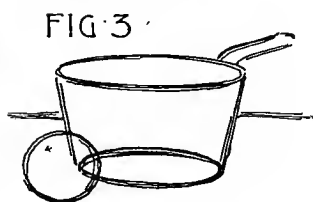
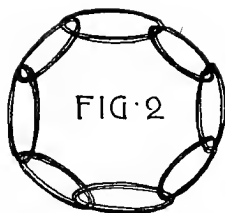
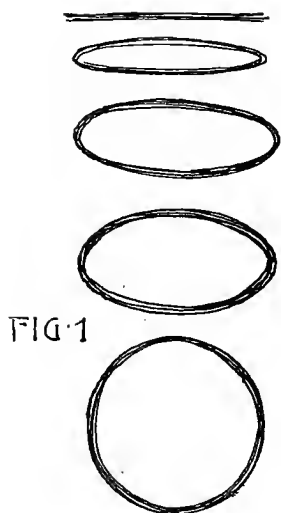
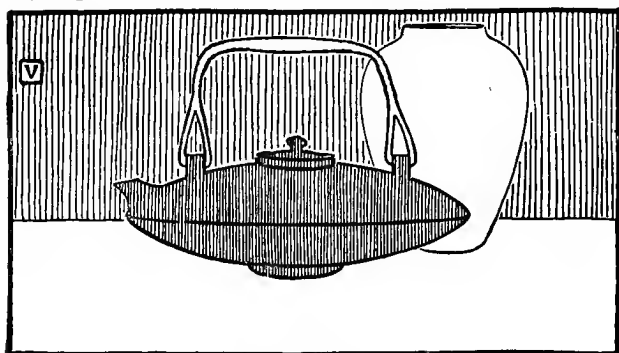
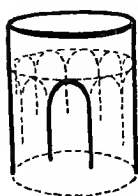
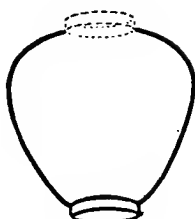
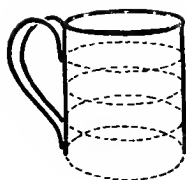
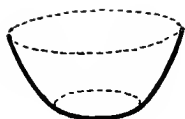
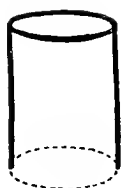


FIG. 5





PUT LABEL ON →

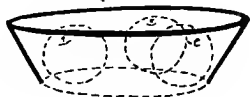
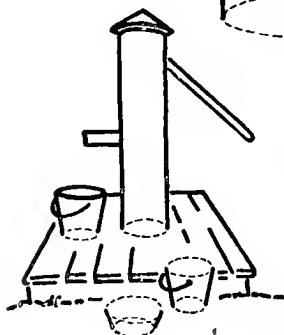
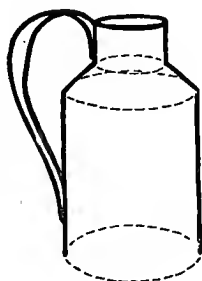


PLATE XII

Then try a chain of ellipses (Figure 2); "no fair turning the paper around!" Use the whole-arm movement as in writing exercises. Look for ellipses in the school-room, on the street, in pictures.

There is a second part to the principle for this year which reads, *Of two horizontal circles (placed in a group below the level of the eye) the lower appears a wider ellipse in proportion to its length than the upper.* For school drawing objects always are placed below the level of the eye. In an opaque object, like a pail, not one person in a thousand sees the slight difference in the width of these ellipses, but, strangely enough, it is not difficult to see that a drawing made otherwise is incorrect.

Some way, we must have the pupils really see that this principle holds true. It can be seen in a thin, cylindrical glass tumbler when placed near the eye and slightly below the eye level. This involves a procedure not always convenient with a large class. If we take a hoop, or the waste-basket, and hold it just below the level of the eye until the class sees how wide the ellipse really is, and then slowly lower it, every child can see that it seems to grow wider as it drops. In other words, we can see farther down into the circle.

Let us suppose that every child has carefully observed this change and can tell us about it. Ask the class to draw a pail and see how many can use this new wisdom. We shall find that the meaning of this principle must be learned through experience in drawing.

On Plate XII is given a series of test problems. In each the full lines indicate the lines to be drawn on the board by the teacher. The dotted lines show what the teacher is to ask for. After these have been worked out, as with the fifth-grade problems, let the pupils give new tests. *Always draw the whole of every ellipse, whether the whole can be seen or not.* This is the only way correct results can be secured by anybody, pupil or artist.

Paste in an orderly manner on a sheet of drawing-paper pictures showing ellipses, and make the ellipses with pen and ink. Label the sheet properly.

After considerable drill we are ready for the drawing directly from cylindrical objects. All the while it is the best of practice for children to correct and mark drawings other than their own. Such work encourages critical observation, and everybody knows that it is easier to see the faults in the work of another than in our own efforts. Pictorial drawing can be mastered only by repeated trials; draw, draw, draw!

We will have in the classroom, on the front desk, a variety of objects, vegetables, fruits, cups, bowls, pitchers, measures, glasses, cooking-utensils, cans, vases, bottles. There need be no dearth of material. Have pupils select groups of two or three from this conglomerate collection and arrange them on boards or desks about the room. If placed on desks, the desk top should be horizontal.

By means of discussion the facts will be brought

out that objects in a group ought to have relationship and consistency, and also some variety. Things which are associated in actual use in life are pleasing when represented together in a drawing. Their use is indirectly indicated and our imagination thereby stimulated; hence they seem better worth the doing than meaningless combinations. Then there ought to be some variety in size, shape, light and dark, and color, in the grouped objects. Nothing is permanently attractive which is monotonous. A drinking-glass and a lemon would form a group consistent in idea and varied in its shape, size, and color make-up. A glass and a pumpkin would be inconsistent.

In making the first sketch of an object or group, all the lines should be light and free, merely tentative or trial lines, made in a frankly preliminary way to locate the objects and their parts. (Plate XI, Figure 3.) Draw the whole object with the same freedom used in the practice work in drawing ellipses. When a class habitually draws this way, you may be sure of good drawings. The very method indicates a willingness and an intention to make changes and movements, which are always necessary. In the final lining-in of a pencil drawing, the pupil should bear in mind that a sure way to give the impression of distance, that one object or part of an object is nearer than a second object or part, is to draw the nearer one as a whole with a darker line. As we have seen, this is but Nature's law, — distance decreases apparent

values. This means that the near edge of an ellipse may be brought forward where it belongs by making it stronger than the back edge. The final group of drawings for the year may be made in color, as in the fifth grade. (Plate XI, Figure 5.)

• Sometimes the balance of the drawing will be improved, as with nature drawing, by adding a well-drawn initial in just the right place. This initial should in some way reflect or echo the drawing. It may repeat the shape of the paper or the shape of some object drawn; it may reproduce or echo some color used in the objects; it should be strong or delicate, as the case may be, to agree in character with the rest of the drawing. (Plates X and XI.)

COLOR

Where color is used in our school work thus far considered, imitative or naturalistic effects are all that need be aimed for. Color, as we shall now discuss it, refers to its application in design.

Every problem in design, if studied thoughtfully, will reveal a sane plan of coloring. The teacher should have some knowledge of color that she may lead the class in reasonable discussion. She should know that:

1. Color harmony is merely color agreement. We understand that, in music, harmony consists in an agreement of the tones; it is exactly the same with color.

2. A design as a whole should have one dominating color — a brown room, a green book cover, a red shawl.

3. Color areas should vary in size. A design should not show equal areas of light and dark blue, for example. One should dominate. If we use three values (light, middle, and dark) of one color, or three colors, as yellow-green, green, and blue-green, the areas should vary, as small, medium, and large.

4. Nature uses bright colors in small areas (or for short periods of time). This should be our guide. The large part of any design should generally be quiet, with a small accent of brighter color. A good rule is — the larger the area, the more quiet the color.

5. Technically considered, black, white, and gray are not colors, but neutrals, and one or more may be used, if desired, in many color schemes.

6. All colors will agree if sufficiently light in value. This is because the light, not the color, dominates.

7. All colors will agree if sufficiently dark in value, because the dark dominates.

8. It is generally safer to have colors of slight range in value, all light, all dark, or all near middle value.

9. The changes in value (light and dark) in colors should be orderly, a light value, a darkest value, and one halfway between these two. (This is all that it is wise to use in the grades.)

10. Considering the neutrals as colors, the simplest harmony is black and white, or black, white, and middle gray, or three grays, light, middle, and dark. This is sometimes called a "Harmony of Neutrals." More agreement, and therefore more harmony is ob-

tained by using two or three grays than by the strong contrast of black and white.

11. A one-color harmony may be made by using two values, or three equidistant values (light, middle, and dark) of one color. This is Dominant Harmony, because one color dominates.

12. An Analogous Harmony may be made by using two or three neighboring or similar hues (colors), as orange-yellow, yellow, and green-yellow. Generally the key color, the middle color, should be the purest in color, and used to accent some small important center of interest, as the title on a book-cover.

13. Oftentimes in school work the cover-paper, or other material used in construction work, dictates the general color scheme for the whole; for example, a design on brown crash may be worked out in tones of brown.

14. Added interest is always obtained by using an appropriately symbolic color. The symbolism or meaning of colors is as follows: —

White: light, purity, cleanliness.

Black: darkness, despair, mourning.

Gray and Dull Brown: simplicity, quiet, peace.

Red: love, passion, bravery, valor.

Orange: knowledge, benevolence, home.

Yellow: wisdom, goodness, inspiration.

Green: fruitfulness, prosperity, life, hope, immortality.

Blue: loyalty, patience.

These statements are easily comprehended. One may know infinitely more about color, but it is not necessary for our school problems.

Before attempting to color any design, we should have class discussion and decide upon a definite, appropriate color scheme. We should select some one color for the whole as being symbolical or peculiarly appropriate for service. We should decide what is to be the center of interest, and that this is to be given the brightest touch of color. Then the whole class should be held strictly to the limitations of this plan. It is suicide to good intentions to allow pupils an unguided, free choice and combinations. All the color problems in this world are governed by the same conditions of use, appropriateness, and symbolism that the school design imposes upon us. Therefore, successful coloring depends upon clear and orderly thinking, and, of course, the child cannot do this unaided.

Recall to mind a beautiful room or gown which you have seen. Read over the list above, from 1 to 14, and see if you do not find that the room or gown exemplifies these same principles of color combinations.

We have found in our other drawing work that good results are not to be expected as the result of the first trial. Likewise, in our color, we have some teaching to do. We shall need practice lessons in putting on flat-color areas of crayon, or flat washes of water-colors. To do this skillfully requires patience when working with crayon, and a full brush, a tipped paper (so that the water will settle at the bottom of the wash as fast as we put it on), and considerable deftness when water-colors are used. We shall want to

trace our design several times on paper, then lay a wash over the paper to imitate the color of the background of the material (cover-paper, cloth, or wood) from which the ultimate thing is to be made, and finally paint the design on this background as it will appear on the final material.

After we have finished, we may discover that it does not seem quite right. Unfortunately there are no absolute, all-comprehensive rules for producing beautiful color, or music. At the last, it rests with us. Are all these colors in sympathy? Has the composition unity—is it one whole thing? Do we see the design before the thing? Do we exclaim, “What a striking design!” or do we say, “What a beautiful sofa cushion!”? Is there one color which is too strong or too weak, in value, hue, or intensity, to combine peaceably with the others? The chances are ten to one that some part will have to be changed; perhaps the whole color scheme would better be taken out under the faucet and washed off, leaving the drawing only. Possibly one color needs brightening here or dulling there. There can be no real education of the color sense without thoughtful work. The love of color must be developed in the individual through his own efforts.

It is rather interesting to note that in a class of forty, two or three may produce commendable results on these first experimental designs, and that the others in the class will generally agree upon these sheets as

the best, — if they understand the problem. Class criticism as to excellent and poor results, with reasons so far as they may be given, are of great benefit. After such criticism comes more practice work, and finally the application of color to the cover-paper, cloth, or wood. Later on, under “Design,” are given specific problems involving color.

LETTERING

The pupil who letters better than his neighbor does so because he comprehends more thoroughly three simple principles which are involved in good printing.

It will help us in our teaching if we compare excellent printing with inferior work that we may note the features common to good lettering. We can pronounce in ten seconds all the words written on the board for the spelling lesson. Now if we try to read the list from beginning to end and to see each letter in each word, it will take us several times as long. Little children sometimes read before they know all the letters. We read by seeing, not individual letters, but groups of letters, — words. Therefore, it is manifestly necessary that letters should be grouped so as distinctly to form separate words. The simplest and most prevalent error in the printing of a beginner is illustrated in Plate XIII, Figure 1, corrected in Figure 2. We should work on the principle that the letters in each word ought to be placed as near together as they can be, and that neighboring words be placed so far apart

BLES SEDB EHE 1

BLESSED BE HE 2

BLESSED BE HE 3

BLESSED BE 4

BLESSED PAR 5

BLESSED HAR 6

BEESED HA 7

ABCDEFGHIJKLMN 8

OPQRSTUVWXYZ

EXTENDED LETTERS

ANY WIDTH

BLESSE 9

that another letter could be inserted between any two words. It is well to exaggerate both these points at first.

Figure 3 shows another familiar fault in school lettering. There is lacking in the mind of him who does work of this nature a definite standard of vertical. The fact that these letters are at cross-purposes does not jar him. The consistency of movement which should come from the vertical position of these letters is missing. The lettering lacks unity for this reason. Generally where letters are not vertical in their placing on the paper, their incorrect position is caused by the tipping of the paper on the desk while making the letters. It will be noted that the error usually consists in slanting the letters as in slant handwriting. It is practically impossible in school to get vertical lettering unless the paper be kept vertical upon the desk. Vertical papers will cure slant lettering — in time.

The third and last error is shown in Figure 4. Perhaps it will be best to consider this in two parts. The pupils will tell us that the *B*, *E*, and *S* are upside down, but why are they? It is not a question of balance, for a vertical line through the *S* will prove that it is perfectly balanced. "But it looks as if it would fall over!" The answer is right. It seems to lack, not balance, but the power to keep its balance, that is, stability. We are accustomed to seeing tree-trunks, and tall chimneys, and snow-men, and a thousand other things so made that they are apparently able

to stand up without danger of toppling, and although we know that the *S*, *E*, and *B* cannot fall over, we are better satisfied when they do not look as if they might do so at any moment. Look at any one of these capitals on any printed page, and perhaps you will be surprised to see, when you turn the page upside down, how much larger the lower part is than the upper. This gives the letter the effect of having a firm foundation.

Now notice the horizontal lines in these letters. (Figure 4.) They have been put at different levels in the several letters, each level independent of the others. Good lettering has an orderly plan in its horizontal lining, just as it has in its vertical lining. A simple plan adopted by many, because it gives variety and consistence and good proportions, is to divide the height of the letters into thirds, and to base all the horizontal lines upon these division lines. (Figure 5.) Lettering is correct if consistently built on any other similar plan. (Figures 6 and 7.) It is useless to try to get good lettering without first drawing light guide lines. When one considers how the professional sign-painter always plans from first to last his letters and words with light pencil or chalk lines before painting a letter, one marvels not at the failure of those pupils who cannot wait to do this preliminary work, but rush in where adepts fear to tread.

Let us again state the three principles: (1) *Group all letters into words, with definite space between the words;* (2) *the lines or axes of all letters must be vertical*

(unless all are slanted at the same angle as when using an italic alphabet); (3) good lettering has an orderly plan in its horizontal lining.

In our first practice, there are two objections to printing the alphabet — the pupils always reach *Z* some minutes ahead of the teacher, who patiently plans and draws each letter at the board; and there is in printing the alphabet neither practice in grouping letters into words nor in separating one word from another. To overcome this difficulty, we might print, "The quick brown fox jumps over the lazy dog." The merit in this sentence is that it contains all the letters in the alphabet; the objection is that the work when done is useless.

The only reason for teaching lettering in school is that we want to use it. The best time to teach it is when we need it. If we have a sheet of drawing to label, or a title to put on a book-cover, this is the time to teach lettering. And all the lettering we need to teach just now is the word (or words) which we are to use. It is best to do this first upon practice paper, where we can make changes at will. This lettering, when corrected and satisfactory, may be copied or transferred onto the final sheet. To copy it, place the practice lettering just above the lines ruled on the final sheet to receive the lettering, then carefully draw each letter and word so that the spacings may be the same on both sheets. Thus we can always place our titles in the center from right to left on any page.

To transfer a printed title, scrub over the back of the paper containing the practice lettering with a soft pencil; lay the paper right side up just where you want the title to appear on the final sheet, and mark over each letter as when making any tracing.

Do not expect children to get good lettering in any way other than by copying. The alphabet is a standard fixture in life, no amateur improvements should be allowed. The teacher should work out the whole word, title, or sentence on the board. First draw the guide lines lightly; then draw each letter with the same free, light trial lines which we used in object drawing. After all the words are sketched in this way, line in each letter as we do a drawing. Use firm lines and always slightly accent the end of each line in all the letters. (See lettering on Plates.)

Where the words are to be colored in crayons or water-colors, it is wise to draw the letters with double lines, first drawing them with single lines. (Figure 9.) Do not try to teach your class more than one style of lettering, nor is it at all necessary to teach the small letters ("lower-case" letters, as the printer terms them). One style of capital letters is all that we can teach well, and all that we ever need to use in our school.

DESIGN

I believe that the only way really to teach design is to make designs which are of use, and are used. The design should be made for the definite purpose of

adding beauty to something which the boys and girls are to make for actual use.

I do not believe in asking children to make borders or surface patterns for the sake of borders, surface patterns, or children. I do not believe that children in the grades should study or copy historic ornament. I do not believe that children should make designs which are purposely imitative of products of early civilization, Indian or savage (except where needed in correlation, and here it is for history's sake). I do not believe that children ever ought to be asked to make designs solely for the sake of learning principles, because principles are learned only through doing real work. I do not believe that children ought to be asked to make "make-believe" designs, as for rugs, vases, and wall-paper.

I have stated these beliefs explicitly because I am aware that this confession of faith will not meet with universal approval. I have made these statements that the reader may observe, as we proceed, that all the work in design here given is what may be termed practical; none is given to teach theory, although theory is constantly used as background knowledge to help us to make good designs. This is quite in harmony with previous discussion in this section of the book. We have space to consider a few specific problems, some of which are possible in any schoolroom.

The school booklet cover is a problem that is always with us. It is the final courtesy which we may bestow

upon our work upon one thing; we will assemble and save the language, or nature study, or arithmetic sheets, or drawings.

The cover is a worthy and keenly interesting problem, if we consider the cover as indicative of its contents. Do not imagine that a successful cover can be made in one lesson. It is impossible. It will require one lesson to discuss and sketch the symbols which properly may be used to enrich the cover; others to plan and sketch the margins, and the placing of title and ornament; another to draw it carefully; others to practice the application of color; and final lessons to transfer it to the final cover and to apply the color. The moral effect of doing one thing well is seldom overestimated. Let us consider several school covers which are possible as a whole, or in part, in any grade.

Covers for a color book

This may contain selected examples of the pupil's best work in color. The title, the most important element in the design, we will have white, because white light is the source of all color. Black indicates the opposite of white — the absence of all color; we may use it as a "little space of silence" for the margin line. Halfway between black and white is middle gray, another definite color standard, against which all colors, including the black and white, may be seen in their true value (their position in a scale from black

to white). Therefore the cover may be of a paper middle gray in value. White light broken up through a glass prism, or in a rainbow, gives us red, orange, yellow, green, blue, and violet; hence these colors may be used with black and white in coloring the design.

The first color cover in Plate XIV shows the sun, in symbol the circle, throwing light to the four points of the compass, and in the center are the rainbow colors. (The reader will have to imagine these colors; the expense of color reproduction is prohibitive.)

The second color cover has a candelabrum holding six candles, symbols of light. The candles at the top are painted red, orange, yellow, and green; those at the base are blue and violet. This candelabrum is not fashioned to stand on the piano, but to lead up to and support the title, while its proportions are properly related to the space in which it is placed.

The third color cover offers the white title, the black margin line, a soapbubble with its rainbow and reflected rainbow, and the pupil's name.

The fourth color cover has the title, margin line, and a monogram. The decorative element consists of a row of soapbubble pipes supporting bubbles; the first at the top is red, then orange, yellow, etc. At the bottom, the pipes and the order of colors are reversed.

Covers for a clipping booklet

This may be made as a portfolio, if preferred. (Plate XV.) The symbols employed are the scissors

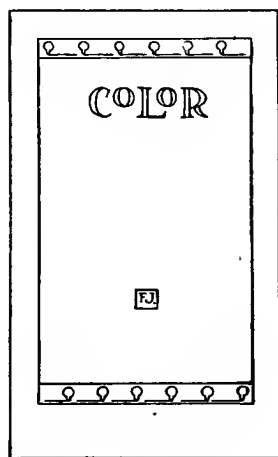
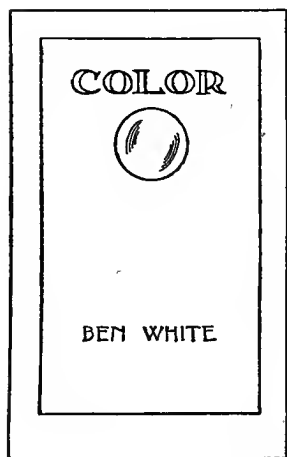
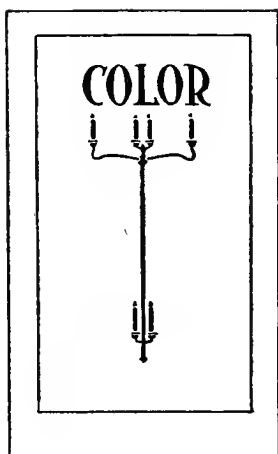
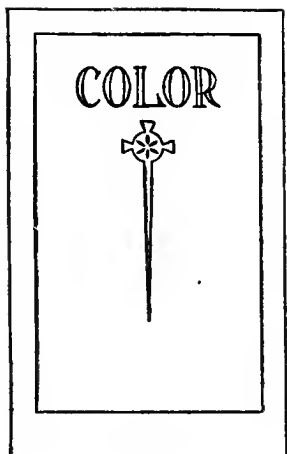


PLATE XIV

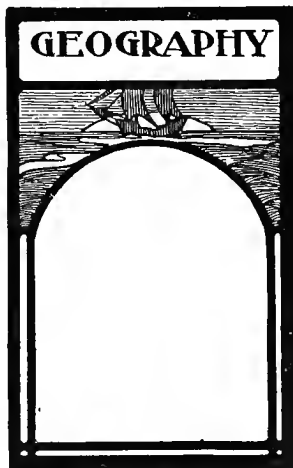
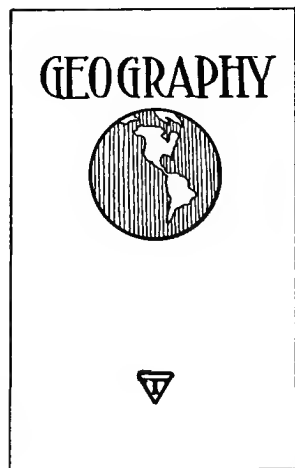
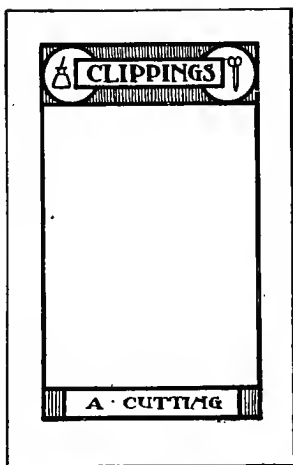
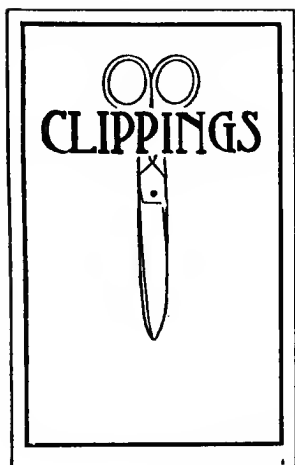


PLATE XV

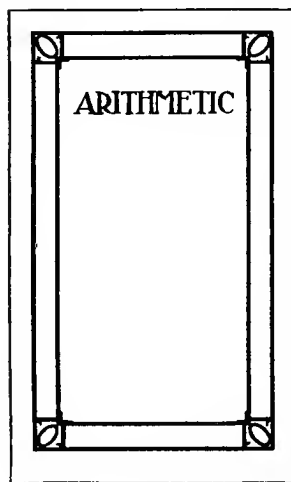
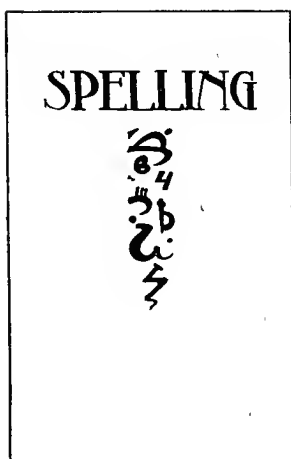
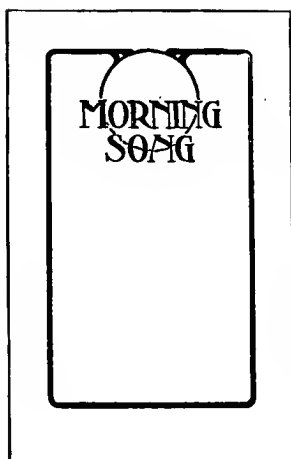


PLATE XVI

and the mucilage bottle; these with the title, margin line, and name, monogram, or initial, form the design. Notice that in the designs the title is seen first. It should dominate the page in position, size, color, in one or all, that the name of the book may be grasped instantly.

Covers for geography notes

Of course, a map or globe will persistently suggest itself as a suitable symbol for decoration for this cover. (Plate XV.)

The second cover shows the explorer's ship on the unknown seas, appearing in silhouette in front of the rising sun, which is white. It is all worked out in outline and simple colors; there is no attempt at light and shade, at naturalistic color, or at making a picture. It is a sign, a symbol. The cover paper may be brown — of the earth. The title is in more or less intense orange, the color symbol of the wisdom got by searching; or orange-red, the red implying valor (in exploration) or love (of knowledge). The other decorative elements will be properly related if halfway between the title and background in color and value. The white is symbolic of light, the light of understanding.

Covers for a music book

This cover is to contain the words of our Morning Song "in my very, very best writing." The first illus-

tration (Plate XVI) shows the sun and its rays (adapted to the form of the page) rising and shining around the horizon line of the title.

Covers for a spelling book

In the back of the dictionary you will find the early symbols which were the forefathers of our alphabet. Some of these are selected and grouped in an orderly manner for the decoration of this spelling book. (Plate XVI.) Tones of yellow (wisdom) or orange (knowledge) may be used for the color scheme.

Covers for an arithmetic notebook

In our system of notation, probably the figures 0, 1, and 10 are the most important, because they represent zero, tens, hundreds, etc. We will use them as symbols. They are arranged to strengthen and decorate the corners of the double border lines. One figure 1 has been reversed for decoration effect, a perfectly legitimate procedure in designing. Arithmetic is an exact science; therefore our color scheme may consist of two or three tones of blue, the significance of which is truth.

Covers for a picture book

Corot loved trees; hence our symbol, drawn in outline and painted in simple colors. Corot's pictures are noted for their silver gray-greens. Need we say more as to the right color plan for this cover?

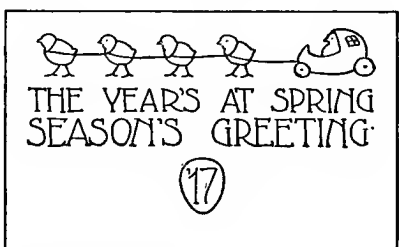
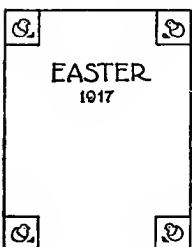
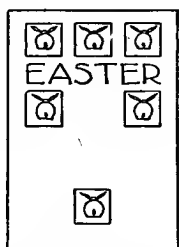
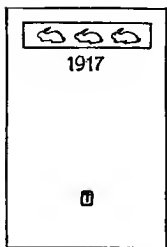


PLATE XVII

THE VALENTINE ♡

SYMBOLS



LOVE



MESSAGE



ETERNITY



LUCK



SERVICE FAITHFULNESS



CHAIN

SUGGESTIONS FOR ARRANGEMENTS

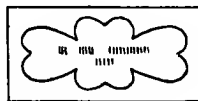
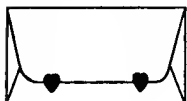
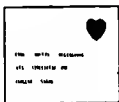
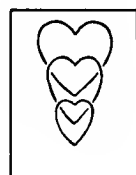
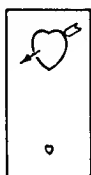
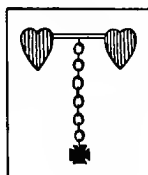


PLATE XVIII

It must be evident that the definite problem — to design a cover for one thing — limits us to the use of certain symbols, and that this very limitation helps us to solve the problems. It is always true that when one or two solutions of a problem are suggested in a schoolroom, the class feels confident that the entire field of original endeavor is exhausted. But let us look again! In any one of these problems but one or two symbols were employed; there are many others equally satisfactory. Or, suppose we can think of no new symbols, what then? Why not try arranging the title and symbols on the color covers as the material is arranged in the geography, or spelling, or other covers? This gives us almost unlimited opportunity for something new.

It here seems necessary to say a word of warning. The aim is not to get something new; *it is to get something worth while*. The architect, or builder, who designed your schoolhouse did not aim to produce something brand-new; he tried to design a school building. All the details of the building are reproduced from other buildings; he merely arranges them to meet certain conditions. This is all we ought to attempt to do in school. Let the teacher give the class, after discussion, the usable symbols, and several good ways of arranging them with reasons therefor, and the class will produce original designs based on the ideas of fitness and order.

This is the plan to be followed in making designs

for Easter cards (white and green), valentines (red or violet), Christmas cards (red and green), or Thanksgiving place cards (simple naturalistic colors). Plates XVII–XIX offer ample material with which to work. Let us remember that every design should be “peculiarly appropriate” in idea, form, and color.

Designs for a sofa cushion

Of course there are many problems in design where symbols are unnecessary, as in a sofa cushion. This is a problem which may be worked out in the fifth grade or above. It is here given, not because it is expected that teachers everywhere will make cushions, but because the method of teaching may be applied to so many school designs.

A half-yard of burlap, or similar material, is required. The design may be outlined with silk floss, or it may be left with the original pencil showing as an outline for the color. The following plan of work has the merit of being possible with the dullest pupils—they can scarcely help learning something about design, nor can they avoid producing designs which are fairly good.

To make successfully and combine decorative renderings of plant forms, producing them directly from nature, is a task requiring a very considerable degree of knowledge and skill. It is a problem rather beyond the average public school class and teacher. We will, therefore, disregard any one individual plant form, al-

THANKSGIVING



GRANDPA



MOTHER



AUNT NELLIE

UNCLE KEMELM



CHRISTMAS



ER



FATHER



ABBIE

1917



FOR THERESA



MERRY CHRISTMAS
TO SAMUEL



FROM FRANK



TO HORACE





FIG. 1

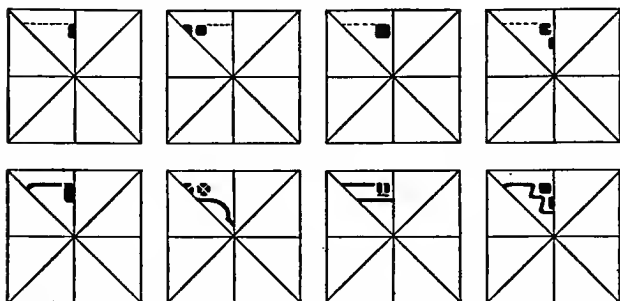


FIG. 2

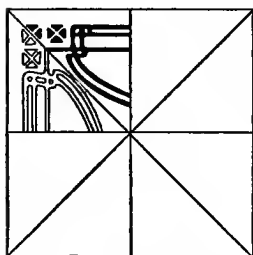


FIG. 3

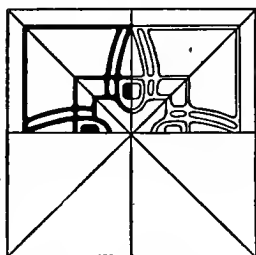


FIG. 4

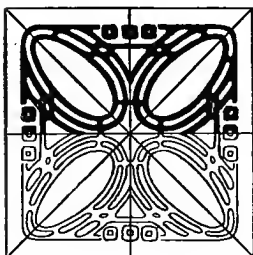


FIG. 5

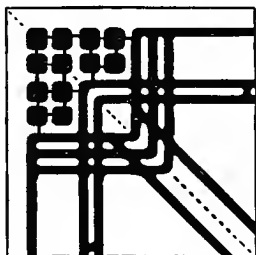


FIG. 6

though we must continually refer to Nature's ways of making her designs, for all we know about design has been learned from her.

Our design is to be composed of two parts, the flower and the supporting stem. Both of these are quite unlike Nature's forms, but then, our cushion is quite unlike a flower-bed. Our problem is suitably to decorate a sofa cushion.

We may begin by designing the flower forms, so-called, on a sheet of paper ruled off in two-inch squares. Our flowers are based on the square because this shape certainly will agree with the general lines of the cushion itself. Plate XX, Figure 1, shows how these designs may be made. Keep them simple, as we must bear in mind that the design is ultimately to be worked out on rough burlap.

The second step is to be taken on a piece of nine by nine paper, which is to be folded sharply on its diameter and diagonals. Draw lightly a margin an inch or an inch and a half from the edge of the paper. (Figure 2.) This paper is just one fourth the area of our cushion; hence all our measurements are half those of the final design — an inch margin now means two inches on the cushion. Somewhere inside this margin line, and confined to one of the one eighth folded divisions, we may draw one or more small squares, thus deciding upon the location of the flower forms, which almost always form the center of interest in the design. (Figure 2.) These squares may now be sub-

divided into the flower units, each pupil selecting one from his sheet of units already drawn. (The teacher should go to the board and do all this upon a large scale. If the pupils copy her absolutely, there is no harm done. The first thing we want the class to understand is the manner of working out this design, and copying, for some, is the very best way to learn.)

Having located and formed our flower form, it is next necessary to support them with stems. There is considerable freedom allowed us here, yet the stems should appear really to support the flowers, and should be related in movement with the margin lines or the folds of the paper. (Figure 2.)

Perhaps, if we were working with a fourth-grade class, this would be enough to attempt. Adding other stems will add interest, if they are related to those already drawn on the paper, or to the folds of the paper (these folds being important directions in a square). We shall do well to draw our stems very near to those already drawn, and parallel to them, that the eye may follow the series with ease. Such a plan also leaves open spaces for the eye to get contrast and rest. Let us always remember to keep our center of interest the most important part of the design, building around that rather than about the portions of lesser importance. All joints may be connected strongly, as in nature, by curved corners, and the corners of the flowers ought also to be curved to be consistent with the stems.

When we have finished this one eighth of our design, and drawn it with black lines, we may fold our paper on its diagonal, and by rubbing on the back with the unsharpened end of the pencil, transfer it to the adjacent eighth. (Figure 3.) Rub with the rounded corner of the pencil, not with the flat end. Now go over the transferred drawing and make the lines black. Then transfer, in like manner, the whole quarter, making the half; which, treated in the same way, will produce the whole. (Figures 4 and 5.) For the first time we may see how our whole design appears. A class criticism will help at this point. The pupils will be entirely willing to try again and again; it is fascinating work. One is astonished to see how varied are the designs!

When the designs are finally accepted, we are to enlarge our quarter and transfer to the cloth. The enlarged pattern is made upon nine by nine paper, as formerly; only this paper now represents one quarter of the cushion, instead of the whole. Fold the paper on the diagonal only; draw one eighth as in the small design. This large eighth may be transferred to the adjacent eighth, as with the small drawing. Then cut off and out the superfluous paper, leaving the pattern. (Figure 6.) Note that in some places it has been necessary to leave small connecting links to hold the paper parts together.

Our burlap measures eighteen by thirty-six inches; fold to show the diameter. Fit the pattern into one

corner of the cloth, and hold it there with a few pins placed through into a drawing-board. With a soft pencil trace around the design.

It is best to use burlap of a light color, as both the tracing and the painted design will show better on light than on dark cloth. Repeat drawing around the pattern until the design is complete. It may then be painted with water-colors, using a color like the cloth itself. This is the simplest plan, although any other orderly color scheme may be employed, if preferred. It will require about three tablespoons of mixed color to paint the entire design. As in nature, we may accent the color of the flowers, which will wonderfully brighten the design. This is well done by using a hue a bit purer or more intense than that used for the stems. If carefully studied by the teacher, these two types of design—first those with forms having a symbolic meaning, and second, those with forms which have no particular meaning and are used because they are appropriate in shape and color—will suggest the proper working-out of any school design problems.

CORRELATIONS

The following direct suggestions are made as to the correlation of drawing with other school work, that we may make drawing a subject of real use in the schoolroom:—

Language and Literature. Proper margins on written work. Reproduction in picture or constructed form of stories

told or dramatized. In the study of the Indian, Esquimo, Arab, etc., draw or make canoes, cradles, tents, palm trees, camels, etc.

Music. Draw ladder and chart.

Geography. Maps, directions, routes, mountains, rivers, harbors, lakes; commerce, boats, trains, wharves, depots, tunnels, dredges, breakwaters, canals; power used, man, animals, wind, steam, gasoline; means of communication, mail, telegraph, cable, telephone; reasons for locations of cities illustrated; public buildings. Let the children copy or trace, when necessary, from school books costumes, houses, animals, trees, etc., of different people and countries studied. Cut these out and combine on paper, blackboard, or sand table to form a group presentation.¹

Arithmetic. In drill upon the circle, draw cent, nickel, dime, etc. In study of days of week and numbers, draw calendar. In comparison of lengths, draw straight lines, houses, fences, flags, etc. In measures, draw pints, quarts, etc. In studying numbers, draw houses and place given numbers on them. In fractions, draw pies, cakes, candies, fruits, and divide them into the required parts. Draw squares, oblongs, and right-angled triangles; later find their areas. Draw rectangles and triangles, in connection with the work in ratio. Draw foot and yard on the board. Draw the clock and indicate by the hands any given time. Draw square foot and square yard on the board. Use vertical and horizontal lines for absolute tests of well-arranged number work.

The Seasons. Appropriate illustrative drawing or construction, for example, in winter, "Coasting," "Sliding on the Sidewalk," "Hockey on Ice," "The Snowstorm," "Shoveling Out," "The Sleighride." Cut out and make sleds, shovels, snow ploughs, sleighs, etc.

The Holidays. Drawing may be made to serve or celebrate the following or other special occasions: Columbus Day, Hallowe'en, Thanksgiving, Christmas, Lincoln Day,

¹ Described and illustrated fully in *School Drawing, A Real Correlation*, by F. H. Daniels. Published by Milton Bradley Company, Boston, New York, San Francisco.

Valentines, Washington Day, Decoration Day, school plays and festivals, parents' day, graduation day. Draw, cut, make, and color place cards, gift cards, Christmas tree decorations, flags, shields, tents, drums, soldier hats, valentines, envelopes, etc. Illustrative drawings may be made relating to these occasions.

Some of the above work should be done incidentally during other lessons, using drawing as a language in which to say certain things; at other times, carefully prepared drawings are to be made for use in other subjects; and again, the drawing is to be the ultimate result, as in illustrative drawing, flags, valentines, etc. Whenever during the school year it seems wise to concentrate the drawing work about a center of interest related to school or home life, the teacher is advised, if allowable, to temporarily put aside the regular drawing outline. Let us make our school drawing vitally related to school life.

PICTURE STUDY

This summary presents a complete outline for picture study. It is obvious that it is too difficult for the lower grades, but it has seemed best to present the entire scheme and to suggest that each teacher adapt it to her class, omitting any parts which time or age of the children makes impracticable.

Art is appreciated "*according to the degree of knowledge possessed, and of the sensibility to the pathetic or impressive character of the thing known.*" (Ruskin.) Select one picture for study, preferably, but not neces-

sarily, one hanging on the schoolroom walls. According to grade, one or more points like the following, may be considered in class: —

Suggestion. What is the story told in the picture? Is not this story interesting to you because you have had similar experiences? Does it appeal to the emotions? Does it suggest quiet, or peace, or movement, or energy, mother love, intelligence or faithfulness in animals, the gladsome message of Spring, the splendor of Autumn, the power or wonder of the sea? What does it mean?

Interpretation. Does it not present clearly some phase of life or activity, one of Nature's moods? Is it not better told by drawing or painting than through literature, music, sculpture, or any other art? Is not reading or painting the best medium of expression by means of which certain truths may be intelligently presented?

Idealization. In all probability there is more than suggestion and interpretation expressed in the picture. It is a portrayal of the ideal. Nature suggests the ideal but rarely does more. For example, Sir Galahad and his horse as painted, are not drawings from one man and his horse, but a composite of the finest images which the artist has succeeded in storing up in his mind as the result of years of study from the best models of men and horses. The masterpiece in art represents nature seen through an artistic temperament; that is, a temperament which has

made it a life-work to study the best in nature and art.

“For, don’t you mark? we’re made so that we love
First, when we see them painted, things we have passed
Perhaps a hundred times, nor cared to see,
And so they are better painted — better to us,
Which is the same thing. Art was given for that:
God uses us to help each other so,
Lending our minds out.”

Browning, *Fra Lippo Lippi*.

Art through idealization enables us to see the beauty which nature suggests.

Delight. Above all, believe that the painter paints because he loves the thing he paints, and loves to paint the thing he loves; believe that he knows that he has an ideal of beauty to reveal to the world; and the enthusiasm and joy which went into his work will be yours in proportion to your comprehension of his message.

The energies of the pupil during this work may well be expended upon the production of a simple booklet; beautiful because well arranged, colored, and executed, containing an essay upon some one picture or painter. Material: for teachers, several prints of various pictures by the artist: for pupils, one or more penny pictures. Method: A plan for making a booklet is here given in detail, to be adapted to grade school: 1. Study of picture, other picture, by same artist, and the life of the painter. 2. Cut out and mount the picture and its name on paper of correct

size and shape. 3. This mount dictates the size and shape of the booklet, all the pages to be the same. 4. Lightly rule the margin lines for the written matter on the other pages for text. 5. The cover may be of gray drawing paper, bogus paper, or colored construction or cover paper. 6. The symbolism, arrangement of design elements and their coloring are suggested herein under the heading "Design."

THE GRADE TEACHER AND THE SUPERVISORS

The excellent grade teacher, a composite here imagined from many excellent teachers, may be heard to say: "As a grade teacher, I have fifteen subjects to teach. To do my work well I ought to know all there is to know about all of them. To acquire such knowledge I should have to live as long as the Sibyl of Cumæ. Believe me, Madam Drawing Teacher, I am eager for all the help and inspiration you can give me. I believe we grade teachers, as a whole, are better *teachers* than our supervisors. This is not saying that we can teach *drawing* better! I am not sure but that we could teach it better if we could draw, but we cannot draw as you can (or ought to), and we depend upon you to do the thing you are employed to do,— *we want you to show us how to draw, and to draw well.*

"If I alone fail to get the results you wish, it is because I am weak. If my sister teachers fail with me, it is because you are weak. Do us the justice to

find out where the fault lies. We have a right to demand your sympathy and help. When I am blessed with a drawing teacher of the right sort, there is but one course of action open to me — I must do my utmost to learn from her and to work with her. It would be my preliminary business to prepare materials for class and supervisor, — blackboard, chalk, paper, pencils, crayons, paint, paste, thumb tacks, — whatever would be required. Why should our time be wasted, after the supervisor's arrival, in sending Mary to the next room for paste, John to the attic for drawing boards, or the janitor to the stockroom for paper? Why use ten minutes to put water in the paint cups, while all sit in melancholy idleness simply wasting time? Why institute a frantic search for a paintbox which has color in it which has not petrified? Surely the supervisor will make more rapid progress before the class if he has paint which it is not necessary to thaw out!

“If the lesson is to be on nature drawing, I will not have the table covered with branches of impossible size. The children delight to prepare such things before school or at recess. I will have the specimens cut to the right size and ready on each desk.

“I will see that all materials are ready, because to do so is true economy. I shall gain nothing by leaving preparation until the last moment; I shall learn nothing by seeing the special teacher attend to it. By failing in what is my plain duty, I am robbing myself

and the class by wasting the minutes during which she could be of service to us.

“When opportunity offers, while the class is drawing with the supervisor, I will become a pupil and draw with the others. I will also make a record of the drawings, and notes of the helpful points of the lesson. I may want to give the same lesson next year, and the surest way to remember the method and illustrations is to etch them now on the motor brain centers through this physical activity. If, at another time, the supervisor goes about the room giving individual criticism, I will go with her. If need be, I will often ask, ‘Why?’ because I want to know.

“All these things would I do because I see in the wisdom of my years that the doing of them will help me to make a just return to the community for my salary. I have lived long enough to learn that it does not pay to give short measure. No cry of mine that the town is too small, that the community is unresponsive, that the children are dull, or that the superintendent does not recognize my talents, will aid my cause one jot, or move me toward a better position. I have learned that if my eyes see things askew, the fault is with my eyes. The world is plumb, and solid and right side up after all. My future rests with myself, not with others. I have but to say, by the deed, ‘I will go on!’ and on I shall go. Superintendents and principals are watching for my coming. They will travel leagues to meet me!

“Experience has taught me to appreciate the words of one of our seers: ‘A man is relieved and gay when he has put his heart into his work and done his best; but what he has said or done otherwise shall give him no peace. It is a deliverance which does not deliver.’ ”

COLLATERAL READINGS

1. *On nature drawing* : —
Nature Drawing. Edited by Henry T. Bailey.
2. *On design* : —
Decorative Design (for the grades). Lawrence and Sheldon.
3. *On lettering* : —
Lettering. Thomas W. Stevens.
4. *On blackboard drawing* : —
Blackboard Drawing. Frederick Whitney.
5. *General* : —
 - a. *How Children Learn to Draw*. Walter Sargent.
 - b. *School Drawing, A Real Correlation*. Fred H. Daniels.
 - c. *Construction Work for Schools Without Special Equipment*. C. Edward Newell.
 - d. *The School Arts Magazine*. A monthly periodical for teachers, published by The Davis Press, Worcester, Massachusetts.

CHAPTER VI

NATURE STUDY AND ELEMENTARY AGRICULTURE

THEY ARE CLOSELY RELATED

LEARNING to live with Nature: learning to work with Nature — are not these the keynotes respectively of nature study and of agriculture study? The one brings us into interesting, sympathetic, and understanding contacts with Nature; the other makes us co-workers with her for our own and others' benefit. But, whichever name we use, we are in both studies dealing primarily with Nature herself, not with books; although books are most helpful, yes, they are indispensable, if we will use them to supplement — rather than to take the place of — our own first-hand experiences.

There is no clearly defined line separating nature study from agriculture. The successful farmer is a student of Nature no less than the botanist and the ornithologist. The old farmer, to whom all the other farmers for miles around went to buy their cabbage plants, confirms this view. When asked if he was not afraid of the growing competition in market gardening, he replied, "No, I've been raising cabbage plants for nigh onto fifty years, and I just found out something this spring about them, I never knew before.

Next year I'll get the jump on every one in the business."

Nature study may be so taught that from the beginning children are developing this purposeful interest in Nature and at the same time are being trained in skillful coöperation with her in growing those products that are useful to mankind. Moreover, agriculture cannot be learned in any other way. In the pages of this chapter suggestions are made to show how material may be selected and used to these ends.

GRADES I-III

Pupils of primary school age are interested in living things — trees, plants, animals. They care little about inanimate things, such as stones, soils, etc. Each season provides for the teacher the suitable living subjects for study. But the material is so profuse that she must choose.

Trees

In spring and fall perhaps the most appealing call of Nature is made by the trees. In the spring the buds, bursting into flower and leaves; and in the autumn, the nuts and the colored and falling leaves command and hold the attention. Teachers should take advantage of the children's instinctive interest in these things. Whether she takes up nature study in spring or fall she will naturally begin with the trees.

Suppose the teacher starts with the maple tree.

She should go with her pupils to the trees themselves. Don't begin with books and pictures. Leave them until they know the trees first-hand. They can sense the beauty of their symmetrical forms and understand why they are used for shade and ornament. They can see the characteristic shape of the leaves and note the bark. Then from books they may learn about the sap of the sugar maple, and from parents and teachers they may gather some information about the use of maple wood in making floors, interior finish, and furniture.

The colored maple leaves may be used in the autumn for decorative purposes in the schoolroom. They may be mounted by the children and thus used in seat and hand work. They may be used as patterns, the children drawing outlines and attempting to imitate the colorings of Nature.

The teacher need not wait until the appearance of autumn leaves before she begins her work with trees. She has prepared a list of trees with which she wants her pupils to become familiar during the fall months. She may plan a field trip or a walk into the woods with the purpose in mind of teaching one or two trees — maple and tulip, maple and oak, evergreens and deciduous trees, etc. By skillfully directing the attention of the children she may lead them to observe the particular species she has in mind. The tulip tree, because of its tall straight trunk, large broad leaves and characteristic bark, is conspicuous. The maple

with its spreading branches and distinctive leaf form is easily distinguished. During the walk, or out-of-door lesson, after the attention of the children has been directed to the trees that are being taught, there might be an interesting game played in which other trees of the same kind will be found. Leaves from both maple and oak, if these are the trees that are being studied, may be taken back to the classroom by the children. The leaves may be mixed up and, as a seat exercise, each child may be given a number of leaves to sort or group according to kind and name. The children may check each other's work. They should not be called upon to describe the leaves as to their shape or texture, for this is a difficult thing to do unless one is familiar with the necessary technical terms.

During the winter months a review of the trees studied in the autumn may be made and the children may be taught how to distinguish and name the trees when they are bare. Other types may be studied, such as the evergreens, if there are any in the vicinity of the school.

The spring months offer an opportunity to learn the trees from the blossoms. There should also be frequent field lessons for the purpose of making observations of the opening of the leaf buds as well as for studying the flowers. Have the children note that some trees are in blossom before the leaves appear while others put forth the leaves before the blossoms.

Fruit trees and flowering shrubs should be observed and studied as well as forest and shade trees.

In dealing with a group of children representing practically three grades the teacher will find that some have much more knowledge and will be able to do considerably more advanced work than others in the group. This fact should be taken advantage of. The older boys and girls, if properly directed, would furnish the school with samples of wood from the varieties of trees that are being studied. These could be used for recognition tests. Games in recognizing the different kinds of wood could be planned and the children could learn to test one another's knowledge.

The teacher should keep a list of the trees that are studied that her work may have plan and purpose and also that she may not duplicate her work from year to year. The common trees of her neighborhood will furnish all the material a teacher will need for tree study.

Flowers

It will scarcely be necessary to arouse or even stimulate the interest of children in flowers. Interest is there already, but it will require guidance. The common wild flowers of the neighborhood should be the objects of study in the field lessons. The children should be encouraged to take flowers to school and arrange them in the most attractive way for decorating the room. Each lesson will provide the desired material.

While on the excursion the children should be led to observe the most striking characteristics of the flowers that are selected for study. They should note that the arbutus grows in dark places under the leaves, the jack-in-the-pulpit in shady and damp places, the goldenrod by the roadside and in vacant lots, etc. These observations should become the subjects for conversation and oral language. The simpler names should be used in the spelling lessons. In the winter months plants should be growing in the schoolroom and the children should be made responsible in turn for their care. Ferns, palms, geraniums, hyacinths, etc., are good for schoolroom growing. The children can easily be interested in making contributions of boxes, flower-pots, dishes, etc., in which to grow the plants. They should help in getting the right kind of soil, in potting the ferns, in slipping and rooting the geraniums, and in deciding upon the proper placing in windows.

Plan ahead for the study of spring flowers. The children will probably discover the first evidences of spring. Be prepared to correlate the study of nature with the language lessons and the teaching of memory gems. Keep a chart of flowers in the order in which they are brought to school by the children. Jack-in-the-pulpit will suggest Clara Smith's *Jack in the Pulpit*; the violet will suggest Dinah Maria Muloch Clark's *Violet*; the dandelion, Helen Gray Cone's *Dandelions*; the daisies, Frank Dempster

Sherman's *Daisies*. Each flower and every natural phenomenon has its lesson or poetic suggestion and these early years of childhood is the time to make this connection.

Birds

During the latter days of autumn pupils should be led to observe the departure of the migratory birds, and in the spring have them note their return. Those birds that remain through the winter should be observed and their names may be learned. Take the children into the fields. Have them see and name the kinds of birds that gather in flocks. Call attention to the food they are eating, noticing whether they are in grain fields, among weeds, or in the trees that bear fall berries.

Tell the children or read to them stories of the migration of the birds to warmer climates. Lead them to see and name those that remain during the winter and get them to think and ask questions about such things as, how the birds keep warm and how they find enough to eat. The children can plan ways to feed the birds around their homes and in the neighborhood of the school. If they put crumbs, bones, suet, grains, etc., where the birds may find them near the school, it will not be long before the birds will go to school as regularly as the pupils do.

The spring is the time not only to note the return of the migratory birds, but to become interested in

the songs of birds and their home-building. During two or three weeks a little time each day may be given properly to informal reports by pupils and teacher of what they have heard and seen in the out-of-door world.

Plan to have bird-houses made by the boys and placed near the school or their homes and then have them watch the birds that build their nests in these houses. This study and care of the birds will do more to train the children to protect them, their nests, and their young than any amount of precept that might be given.

In a field lesson the songs of birds might be studied and the children might learn to distinguish the kinds of birds by their call songs. Some very young children become extremely keen in making such observations.

If they have seen the swallow building her nest in the rafters or eaves of the barn and reported on it, Edwin Arnold's *The Swallow's Nest* would be an appropriate memory gem for them to learn. If they have told about a nest of young robins that they have discovered near their home, talk with them about the little birds, and, when they are in the true spirit, have them learn Tennyson's *Little Birdie*. The bluebird will suggest Emily Huntington Miller's *The Bluebird*.

Lessons on the usefulness of birds should also be presented. Take the children into the fields at the

time of ploughing and have them watch to see what the birds eat, how they get their food, and what and how they feed their young.

These suggestions might be indefinitely multiplied. Enough have been given to indicate the method of procedure.

Gathering nuts and seeds

Children naturally react to every seasonal change. In the autumn it is as natural for them to be interested in seeds and to gather nuts as it is for the squirrels. These instincts should be fostered. Go with them into the fields and woods, be interested in the things that interest them, and encourage each child to bring these things to school. Let the gathering of nuts form one of the matters of school concern. The butternut, the walnut, hickory nut, chestnut, hazelnut, and the horse chestnut may be taken to school and used in seat work. Have the children learn to recognize them and become familiar with their uses.

Common seeds and grains should be presented. The children should be taken to the harvest fields and encouraged to make collections of samples of common grains such as wheat, oats, rye, corn, and buckwheat. Specimens should be found in every class-room. As a part of hand work the children might make paper or pasteboard trays in which their specimens could be displayed or it might be possible for them to secure

small bottles of uniform shape and size to be used for this purpose. Have common vegetable seeds collected and studied. Now direct the minds of the children to the growing plant or vegetable and its uses. They should become able to recognize the various kinds.

If there are opportunities for planting seeds on the school lot, the work of the autumn and winter months should lead naturally to the school garden. The plans for this type of work should be carefully thought out. The plot should be selected to secure fertility, adaptability to crops, good light and drainage. In making the selection of site all the children in the school might take a part and the efforts of the older boys could very easily be enlisted when it came to digging and preparing the soil for planting. Care should be exercised in selecting the varieties of vegetables to be grown, and in schools where there is no opportunity for supervision of the gardens during the summer months only such vegetables should be grown as will mature before the summer vacation begins or shortly after. The crop is the natural reward of the garden. (See under Grades VII and VIII for further suggestions regarding the garden.)

Each child should be made to feel that he has a part in this enterprise and should have some definite task assigned him to perform. The older pupils should perform the heavier tasks and the younger ones should feel that they are acting as helpers.

Insects

Some common examples of interesting insect life are the butterfly, ant, honey bee, tent-caterpillar, potato beetle, etc. It may be that the tent-caterpillar was so numerous during the spring and early summer months that it became a pest. If this was so the teacher has an opportunity to relate her nature-study to a community problem. The teacher should become familiar with the life history of the insect. She should be able to follow it from the egg through the larva stage to the cocoon and finally to the moth that lays the egg. This story and life history should be studied and observed by the children. In the late summer or fall, after the egg-masses have been deposited by the moth, they should be taught how to find them that they may be destroyed. In the fall have the children take the larvæ of various types of moths and caterpillars to school. Have them placed in boxes or cases with fresh leaves where they can be watched. After the insects have passed into the pupa state they should be carefully put aside in some safe place and with the approach of spring brought out for observation. The successive changes are full of interest to the children. They should be encouraged to look for cocoons in the field, on the roadside, along old fences, in dark corners, to ask questions about them, and to relate to their classmates where and how they were discovered.

GRADES IV-VI

From nature study to agriculture

In these grades the emphasis is still on what may be called companionship with Nature, but there should be a somewhat more definite trend toward practical ends than is desirable in the previous grades.

To illustrate: When in the first three grades we studied insects, we properly selected butterflies because of their beauty and their interesting development from caterpillars. But in the intermediate grades we would more wisely select bees for study because of their honey-making or because they help flowering plants to produce fruit. Or we study the cabbage-moth because of the relation to the cabbages growing in the home or school garden. Again the very young child is attentive to the robin because of its color, song, or nest, while the older child may be easily interested in the robin as a destroyer of insect pests.

When pupils have reached the fourth grade they are able to take responsibility in raising things. It may be a garden, pigeons, hens, a calf, or a pig, but whatever it is, let him or her assume a definite, if small, responsibility in its care.

The project method of instruction

A project is any piece of productive work that is organized in the school where instruction and direction are given, and carried into execution at home.

This is now recognized to be the only effective way to teach agriculture. But it is not fully applicable in the Intermediate Grades, nor even in the Seventh and Eighth Grades. Yet in an informal way and to a degree it may be applied in both groups of grades. In Grades IV–VI pupils may have their individual projects that they may carry on at school or at home while the more general nature study work suggested for Grades I–III is systematically extended through the regular class work. This type of work, in which learning and the application of knowledge go hand in hand with the realizing of a useful product, may be carried still farther in the last two grades of the elementary school, and this we will now proceed to consider.

GRADES VII AND VIII

The garden project

No agricultural project offers greater possibilities perhaps than the school or home garden, therefore, while other kinds of projects may be undertaken, we shall use this as a type and discuss it somewhat in detail.

The planting and cultivating of a garden will involve: —

- (1) Selecting the site and deciding upon the size and shape of the plot.

(The soil, drainage, and exposure to the sun

will be matters for consideration in selecting the site.)

- (2) A study of the vegetables that are to be grown.

(Pupils should learn the names of the vegetables selected for growing. They should also know the times for planting, the length of time required for maturing, and the character of cultivation required.)

- (3) A study of the preparation of soil for planting, fertilizing, cultivating, methods of preparing and planting various kinds of seeds, the control of insect pests, and plant diseases.

- (4) A study of harvesting and care of crops.

- (5) A study of the value of records and how to keep them.

Motives in gardening

Perhaps most people have a garden for the sake of the crops. They are willing to work for the satisfaction they get out of the crisp lettuce, the delicious peas and beans, the tasty radishes, etc., "right from their own garden."

Others are more interested in the financial profit that comes with a good harvest of potatoes, green corn, etc.

And again there are those who have a garden because they love the soil and delight to cultivate it. Helping things to grow and seeing them grow are ample rewards for all their labor. The products, and

the money profits may not be overlooked, but they are so much *added* to the prime satisfaction.

All of these are proper motives and all should be recognized by the teacher. Any one of them may be the needed spur to set a boy or girl to work at an educating task. And here it may be noted that gardening such as is here recommended is for both girls and boys.

A perspective view

The work in elementary agriculture, like that in nature study, should be governed by the seasons. The school interest and study should run parallel with the farming activity of the community. It is evident that no one outline can be an exact calendar schedule for all schools, but the following gives the necessary sequence of interests, even if the months in which these interests are placed require local re-arrangement.

January and February

1. Selecting the garden site.
2. Planning the garden.
3. Study of
 - a. Fertilizing.
 - b. Cropping.
 - c. Tools and implements to be used.
4. Seed-setting.

March

1. Study of hot-beds.
2. Study of cold-frames.
3. Preparation of soil for seeding.
4. Testing soil for acidity.

April and May

1. Preparation of seed-bed.
2. Planting.
3. Transplanting.
4. Cultivation.
5. Thinning.
6. Insect pests.
7. Plant diseases.
8. Plant propagation.

June and July

1. Continue cultivation.
2. Continue insect pests.
3. Begin work of judging products.

August

1. Continue care and cultivation.
2. Study late planting.
3. Harvesting.
4. Study of types.

Autumn months

1. Continue harvesting.
2. Continue study of types.
3. Plans for fall festivals and exhibits of products.
4. Begin to think about next year's garden.
 - a. Seed-saving.
 - b. Fertilizer.
 - c. Rotation cropping.

Such an outline as the one suggested above might be called the "Garden Calendar," or the "Agricultural Calendar." It, or one like it, might be prepared and hung in a conspicuous place in the schoolroom for the children to consult as the work progresses or as they look forward to the next step in their work.

From their own knowledge they might suggest where it should be somewhat modified to suit the climatic, weather, or other conditions of their particular section or locality.

January and February

January and February are the months when there will be no out-of-door gardening. Selecting the garden site and making the garden plan have been discussed above and may constitute a part of the work of these months.

It is impossible in a short chapter to treat all the subjects that relate to successful agriculture, or to treat any one subject adequately. All that is here attempted is to point to a few of the matters that are of particular interest to the elementary school teacher. First a word about

The school garden

This is often a failure because too much is attempted, because the conditions are not right, and because the limitations of a school garden are not recognized.

Let us admit at the outset that a school garden should not be planned to continue beyond the close of the spring term. The vacation garden is a project quite distinct from the ordinary school garden. It has its place. It is very valuable for the children who can cultivate it during the summer months, but it needs special supervision that the regular teacher cannot give.

The real value of a school garden lies in the fact that it is a means of introducing children to systematic, thoughtful cultivation of the soil and to the raising of crops. Those vegetables and flowers should therefore be planted that will mature before the school closes for the summer vacation.

The school garden is a sort of laboratory where children are taught the "what to do" and "how to do it." Experience has proved that in many thousands of instances the school garden is the forerunner of the home garden. In fact, if the one does not lead directly to the other, it has been to a large degree a failure and a teacher may measure her success in this subject by the proportion of pupils who start home gardens.

We will now pass to the consideration of some of the subjects that occur in the "Perspective View" given on a previous page.

Selecting the garden site

Whether it is a school garden or a home garden it should be planted in the best available spot. Children should not be handicapped in their first attempts at gardening by a location in which an adult would probably fail. Select a spot that as far as possible answers affirmatively the following questions:—

1. Is it level?
2. Is the soil light? That is, does it pulverize easily?
3. Is it well drained? That is, does the water after a rain soak through the soil and flow away?

4. Is it where the sun can warm all parts of it? Do not have it where trees or buildings will shade it for part of the day.
5. Is the soil rich?

Planning the garden

Having selected the site, a carefully thought-out plan for the garden should be made. It should be rectangular in shape and longer than it is wide. Each child should measure his own piece of land under supervision and draw a plan or map of it. It should be drawn to scale, using the inch, one-half inch, one-quarter inch, or one-eighth inch according to the size of the plot. As many details as time and the age and ability of the child will permit may be put in the map. All this will not only be good preparation for the garden instruction but it will be good practice in the application of measurements, map drawing, and mechanical drawing.

The drawing periods in the daily program may very properly be devoted to this during the month preceding the planting time. Many details may be put into the plan, such as the points of the compass, the path leading to the garden, the location of trees, fences, buildings, or the location of such permanent things in the garden as rhubarb, currant bushes, etc.

Now the vegetables or flowers to be grown must be selected. For beginners two or three kinds are better than a large variety. A suggestive list is here given from which selections may be made for the first gar-

den. Further hints are given in "A Seed Chart" under "*Planting the Seeds.*"

Beans { string
shell
lima

Melons { musk
water

Beets { early
late

Peas { early
mid-summer
late

Cabbages { early
mid-summer
late

Squashes { summer
winter

Carrots { early
late

Cucumbers
Lettuce
Radishes

Corn (sweet) { early
mid-summer
late

Spinach
Tomatoes

A variety of other questions follow close on the heels of the decision as to what we shall plant: —

1. How much room does each plant or hill need?
2. How long does it take to grow?
3. If radishes are grown, or lettuce, how many times and when should it be planted to keep a continuous crop?
4. What varieties are best for early and late planting?
5. How much seed is needed?

While planning the garden the necessary tools should not be forgotten. The winter months is the time when the wide-awake farmer sees to it that his tools, machinery, and equipment are in proper condition for use. The home or school gardener should

use the same foresight. Much of the garden equipment needed may be made in the school or at the home, such as

| | |
|-------------------------|-------------------------------|
| Seed-testers. | Tomato racks. |
| Garden line. | Bird-houses. |
| Stakes for making rows. | Hand-weeders. |
| Marker for making rows. | Plant protector from insects. |
| Paper pots for plants. | Hot-beds. |
| Cold-frames. | Sign-board for garden. |

Preparing for work in agriculture by making part of the equipment will give an application to the manual training work of the school.

Testing seeds

The farmer or gardener should use the utmost care in the selection of seed and should plant none that has not shown by actual tests to be fit for use. Many causes may be responsible for weak or useless seed, such as weak growth of the mother plant, rainy weather at harvest time, age, poor storage conditions, etc.

Seed testing is a very simple matter and is highly instructive while at the same time it is an extremely interesting operation for children. It is advisable with children of school age to confine the tests to the larger seeds such as corn, beans, or peas. Possibly the older ones might test beet, radish, onion, and the like. Several methods of testing are used any one of which is within the grasp and ability of the child to apply. Two methods are here described.

Method No. 1 — for beans

Count out one hundred beans at random. Place them on a blotter or piece of flannel that has been moistened, then place this on a plate, cover with a piece of paper, and lay on another piece of moistened blotting paper or flannel. Lay over this a piece of glass or cover with an inverted plate. This should be kept in a moderately warm place. After a few days, when the seeds have had time to sprout, remove them and divide them into groups according to vitality as, *good*, those with long vigorous sprouts; *fair*, those with less vigorous sprouts; *poor*, those indicating only very low vitality; and *dead*, those showing no growth. Determining percentage of germination will offer excellent opportunity for the application of principles in arithmetic.

Method No. 2 — for corn

Take a box about two and one-half feet square and about three inches deep. Fill it half full with sawdust, sand, or light soil. Mark the surface off into twenty-five equal squares and number them. Moisten the contents of the box. Take twenty-five ears of corn, tag and number them corresponding to the numbers of the squares. Select at random six kernels from each ear. Put the kernels from ear 1 on square 1 and so on until all have been placed. Press them into the soil sprout end down. Place a piece of moistened



CULTIVATING THE GARDEN

The rows extend parallel with the long side of the plot



A VARIETY OF CROPS MAY BE GROWN ON THE SAME PLOT

Rows extend across the plot, except the border row in front

Account Frank Jones

| Costs | | | | | Sales | | | | |
|----------|-----------------|-----------|--------|---------------|--------|-----------------|--------|---------------|--|
| Date | Items | Time | Amount | Monthly Total | Date | Items | Amount | Monthly Total | |
| 1918 | | Hrs. Min. | \$ | \$ | 1918 | | | | |
| March 20 | 1 Shovel | | 50 | | June 8 | Radishes | 15 | 5 | |
| " 23 | Clearing Ground | 3 | 45 | 7 25 | " " | Spinach | 40 | | |
| April 13 | Spading | 4 30 | 67 | | " 12 | " | 65 | | |
| " 20 | " Site | 2 15 | 33 | | " " | Radishes | 30 | | |
| " 27 | Leveling | 3 | 45 | 1 45 | " 15 | " | 1 70 | | |
| May 4 | Hoe & Rovel | | 50 | | " " | Spinach | 7 70 | | |
| " " | Lettuce | | 10 | | " 19 | " | 60 | | |
| " " | Cabbage | | 05 | | " " | " | 40 | | |
| " " | Tomatoes | | 05 | | " " | Radishes | 80 | | |
| " 11 | Lids | | 60 | | " 22 | " | 80 | | |
| " " | WORK | 6 | 90 | | " " | " | 15 | | |
| " 18 | Nails | | 05 | | " " | Spinach | 70 | | |
| " 31 | Express Wagon | | 3 00 | 5 23 | " " | Lettuce | 15 | | |
| June | | | | | " 26 | " | 20 | | |
| | | | | | " " | Radishes | 45 | | |
| | | | | | " 29 | " | 30 | | |
| | | | | | " " | Spinach | 15 | | |
| | | | | | " " | Lettuce | 70 | | |
| | | | | | " " | Butts | 35 | | |
| | | | | | " " | Peas | 70 | 9 95 | |
| | | | | | July | | | | |
| | Carried Forward | | | | | Carried Forward | | | |

A PAGE FROM A WELL-KEPT ACCOUNT BOOK

cloth over the box. Keep the box in a warm place and, if necessary, moisten the cloth occasionally. In five or six days germination should have taken place. Remove the covering and examine the seeds. It will be perfectly easy to decide the vitality of each ear.

The actual work in seed-testing will necessarily have to be done by the older boys and girls in the school, but the younger pupils may assist and learn much by watching.

Seed and vegetable identification

At the time that work in the testing of seed is being done it would add interest and at the same time be of practical value to do some work in seed identification. If the teacher will make a careful test of the children's knowledge of the common seeds, she will in all probability be greatly surprised to find how many there are who cannot identify with certainty the common farm and garden seeds. They will probably know corn, but will not be able to name the varieties, or to distinguish between the varieties and name them with accuracy.

Small quantities of the kinds of seeds used on the farms and in the gardens of the community should be secured and arranged in such a way as to display them in the school so that the children may become familiar with them and be able to tell from their shape, size, color, and surface the kind of seed they are handling.

So many splendid cuts and pictures of garden and farm products are available for use that it would not be a difficult task to teach the identification of fruits and vegetables even before they are grown. This work might be done in the lower grades in connection with geography and language work. While the older pupils are working with seed and making their tests preliminary to making up their seed order, the younger pupils may be studying the pictures and illustrations in the seed catalogues. When there is no longer use for the catalogues, the pictures could be cut out by the pupils and used for occasional identification reviews.

Hot-beds and cold-frames

The hot-bed is for starting early vegetables. The cold-frame is for hardening plants for transplanting in the open.

How to make a hot-bed. Get a window sash. Dig a pit about three feet deep in a sheltered spot, facing south or east, a little larger over than the window sash. Line the pit with heavy plank, concrete, or boards. If boards are used, straw or leaves must be packed around the outside to keep out the cold. The frame should be built to fit the window sash and be raised about half a foot higher at the back than at the front so that it will catch all the sunlight possible.

During the early part of March get a quantity of fresh horse manure. Mix it with about half as much dry leaves and leave the mixture in a pile to ferment.

When the pile begins to send off steam, turn it over and leave it in a pile until it begins to steam again. This is the second fermentation and should be finished in a few days. Now throw the manure into your pit to the depth of about two and one-half feet and tread it down to a depth of two feet. The more evenly you distribute the manure, the better your hot-bed will be.

Now scatter over the manure a good covering of air-slaked lime. This will kill all slugs, worms, and other harmful growth, and will keep the soil that you now put on free from pests. On top of the lime shovel four to five inches of rich, sifted loam. Hang a thermometer on the inside of the frame and put on the window sash.

When the thermometer registers seventy to seventy-five degrees and remains steadily at that point, it is time to plant your seeds. Sow them, covering lightly with sifted loam. Keep the surface moist by occasional watering with a finely perforated watering pot. When the shoots appear, raise the sash a little during the warm part of the day to give air to your plants.

When the plants begin to crowd, thin them out or transplant them into small boxes or pots and place them in the cold-frame.

The cold-frame is made like the hot-bed except that no manure is used. It has no bottom heat.

Some plants transplant easily, such as cabbages, cauliflower, kohl-rabi, Brussels sprouts, tomatoes. But

other plants like eggplant and head lettuce are more sensitive.

Death from transplanting is often due to too many leaves. Such plants as onions, beets, celery, and cabbage to a certain extent should be "speared," that is, have their leaves or tops cut back. Here is an excellent opportunity to teach use of leaves, and the relation between the leaves and the root system of a plant.

Preparing the seed-bed

To succeed with a garden one must not only have it located in a sunny place, where there is good drainage, but the soil must be properly prepared or the seeds and plants will starve to death. The soil must be mellow, free from lumps, well filled with decaying vegetable matter and with enough moisture to dissolve the plant food. Plants must have their food in liquid form or they cannot take it up from the soil through their roots. Then, too, the soil must be free from acid. Let us take these fundamental things in turn.

How may we make the soil mellow? The farmer ploughs it and harrows it, until the seed-bed is soft and well pulverized. The spade, or fork, and the rake will do for the small plot what the plough and the harrow do for the large plot. But you must not be afraid of work. Push the spade well down into the earth and turn the under soil up to the sunlight and air. If the lumps do not readily break in pieces when

you strike them, you had better wait until the ground is drier. Work in preparing your seed-bed will have its reward at harvest time.

How may the soil be made rich in plant food? The best plant food is contained in decaying vegetable matter, therefore put over your seed-bed, before you spade it, two hundred to three hundred pounds of stable manure for a plot twenty by thirty feet. If you cannot get stable manure, or not enough to properly feed your plants, use fertilizers that you can buy at the store.

In the study of commercial fertilizers the teacher has a splendid opportunity to correlate her work with geography and also with arithmetic. The child may read in his geography that nitrate comes from South America. That will mean but little to him. But if he learns that nitrate is essential to his having a good garden or his father's having a good crop he becomes interested and he will care more about it if he is told that it comes from South America. If he is told that from eighty to one hundred pounds of sodium nitrate should be used to the acre, he will want to know how big an acre is and how much he will want for his garden. That will be the time to teach measurements as applied to that subject. Go to the garden with the child, have him measure it, draw a plan of it, find the area and find out what part of an acre he has. That tells him what part of eighty or one hundred pounds he will need.

Crop refuse may be used for fertilizer unless the

crops were diseased, in which case it should be carefully burned.

The amount of moisture in the soil will be determined largely by the location of the plot and the character of the soil. More is said on this point under "Cultivation."

Is the soil acid? Buy some litmus paper at the drug store. Take a small amount of the soil and put it in a box or basin. Moisten it with water till it is quite wet, then place part of the litmus paper in the soil and leave it for a few minutes. If the paper turns from blue to red it indicates that the soil is acid. Lime applied will neutralize the acid. From five hundred pounds to one ton per acre is usually a sufficient amount at one time. If clover and the other leguminous crops fail to grow it is an indication that the soil is acid. In making this study the pupils should be encouraged to make observations and tests on their home farms and gardens.

Seeds should not be planted before the times specified in the chart. No time is gained by putting seeds into ground that is too cold for them. Follow also the directions of the chart as to depth of planting and distance apart.

Cultivation and thinning

When the green plants appear above the surface of the ground the successful farmer begins to till or cultivate his garden.

Planting the seed

A SEED CHART

| Name of vegetable | When to plant | | Depth to plant (inches) | Distance apart (inches) | Time of maturity |
|-----------------------|---------------|-----------------|----------------------------|----------------------------|------------------|
| | Hot bed | Open ground | | | |
| Beans, Pole..... | March | May and June | 2 | Poles 36 x 36 | August to frost |
| Beans, Dwarf..... | March | May to August | 2 | Thick drills, 24 apart | 45 days |
| Beets..... | March | May to August | 1 | Thin to 5 x 15 | 50 " |
| Brussels Sprouts..... | March | May and June | 1½ | Transplant 12 x 18 | 150 " |
| Cabbage, Early..... | March | April and May | 1½ | Transplant 18 x 24 | 100 " |
| Cabbage, Late..... | ..... | June | 1½ | Transplant 22 x 36 | 100 " |
| Carrot..... | March | May and June | 1½ | Thin to 5 x 15 | 100 " |
| Cauliflower..... | April | May and June | 1½ | Transplant 24 x 36 | 100 " |
| Celery..... | March | May | Barely cover | Transplant 2 x 4, in flats | 170 " |
|  | ..... | May to June | { 1 Early | { Drills 10 x 30 | 60 to 90 days |
|  | ..... | May to June | { 1½ Late | { Drills 12 x 48 | 50 to 75 days |
| Cucumber..... | March | May to July | 1½ | Hills 48 x 48 | 135 to 160 days |
| Eggplant..... | April | June | 1½ | Transplant 36 x 36 | 45 days |
| Endive..... | March | June to August | 1½ | Transplant 12 x 12 | 150 " |
| Kale..... | ..... | June to August | 1½ | Transplant 12 x 18 | 110 " |
| Kohl-rabi..... | ..... | May to July | 1½ | Thin to 6 x 18 | 25 to 60 days |
| Lettuce..... | March | April to August | 1½ | Transplant 12 x 12 | 120 days |
| Molons, Musk..... | April | May and June | 1 | Hills 60 x 60 | 110 " |
| Melons, Water..... | ..... | May and June | 1 | Hills 96 x 96 | 100 to 150 days |
| Onion..... | ..... | April and May | 1½ | Thin to 5 x 18 | 45 days |
| Parsley..... | March | April and May | 1½ | Thin to 6 x 12 | 140 " |
| Parsnips..... | ..... | April and May | 1½ | Thin to 5 x 18 | 40 to 80 days |
| Peas..... | ..... | April to July | 3 | Thick rows, 24 apart | 135 to 160 days |
| Pepper..... | March | June | 1½ | Transplant 18 x 24 | 90 to 130 " |
| Potato..... | ..... | April to June | { 2 Early | 12 x 36 | 115 days |
|  | ..... | June | { 5 Late | Hills 48 x 72 | 25 to 45 days |
| Pumpkin..... | ..... | June | 1½ | Thin to 2 x 12 | 30 to 40 " |
| Radish..... | March | April to Sept. | 1½ | Thick rows, 12 or 15 apart | 60 to 130 " |
| Spinach..... | ..... | April and May | 1 | Hills 48 x 72 | 100 to 150 " |
| Squash..... | ..... | June | 1 | Transplant 36 x 36 | 60 to 75 " |
| Tomato..... | March | June | 1½ | Thin to 4 x 18 | |
| Turnip..... | ..... | April to August | 1½ | | |

This cultivation consists in stirring the surface of the ground to a depth of two to three inches. If you have a large garden it is economical to do this with a horse-cultivator. For a small garden a hand-cultivator or a rake may be used. By thus stirring the soil a sort of powdery blanket is formed over the surface of the garden. This blanket causes several results favorable to the growing plants: —

1. It prevents the moisture in the soil from evaporating. A hard crust of earth is full of pores that draw the water from below to the surface where it escapes into the air. The pulverized dirt does not have this drawing power or capillarity, as it is called.
2. Air, light, and warmth can pass through this blanket to the plant roots better than it can through hard, crusty soil.
3. This blanket compels the roots to grow downward in search of water, where they are less liable to be injured by the hoe or rake and where in dry times they will not be withered.
4. If a farmer keeps a good mellow blanket of loose, fine soil over his garden, he must cultivate it so often that no weeds will have a chance to live.

To keep this blanket in proper condition it is necessary to cultivate the garden every week during parts of the growing season and at other times every two weeks.

But as the plants grow they must be watched to see that they do not crowd or that there is not too much waste space. If they crowd one another, their growth is stunted. If some of the seeds have not sprouted, your crop will be smaller than you had hoped.

There is much loss on the farm and in the garden from these two causes. The second condition is usually caused by the farmer using poor or dead seed. That can be overcome by a careful seed test. The other is caused by using more seed than is actually needed and then not taking the trouble to thin properly. All excess stalks of corn on an acre are nothing more or less than weeds. This principle is illustrated in the garden. It is useless to try to raise good beets if the plants are allowed to grow too thick. Have the children study their "Seed Chart" for the purpose of finding out how far apart the different kinds of plants should be grown. Take them to near-by corn fields where they may make observations.

There is an economic principle that should be taught here. It costs just as much to plough, plant, and cultivate an acre of corn where there is a sixty- or seventy-five per cent stand of stalks as it would cost if there were a ninety-five per cent stand.

In a small garden these difficulties may be remedied by transplanting the plants that are crowding to the vacant spaces where the seeds or plants have died.

Fighting plant enemies

Plant enemies are of two kinds, insects and diseases.

The early nature study lessons should have made the children somewhat acquainted with a few of the more common insect pests. But when the children have gardens of their own they will meet these pests

on a business basis and will have a reason for studying and fighting them.

The most common insect pests of the garden are: —

| | |
|--------------------------|----------------------|
| Cutworms. | Plant lice. |
| Cucumber striped beetle. | Potato beetles. |
| Flea beetles. | Green cabbage worms. |

Plant diseases are caused by the growth of fungi on leaf or stalk.

Both insect pests and plant diseases are controlled by *sprays*. Sprays are effective only when applied at the right time.

Poisons, such as arsenate of lead, are used to control leaf-eating insects, like the canker worm and potato beetle.

Tobacco extracts, soap sprays, kerosene emulsion are used to kill sucking insects, like plant lice, etc.

Bordeaux mixture and *lime-sulphur* are used to combat plant diseases.

A table is here given showing the common plant pests and diseases and the way to combat them.

Spray when the sun is shining and finish in time to have it dry before the dew falls. Sucking insects will not be killed unless the spray hits them.

As pupils become interested in insect control they will naturally want to see and know what the farmers of the community are thinking and doing. Take them to a farm where spray is being applied to an apple orchard. Get them to inquire about the number of sprays that are applied during the season and at what

PESTS, DISEASES AND SPRAYS

| Plant | Enemy | Spray | 1st Application | 2d Application | 3d Application |
|-----------------------------|--|--|---|--|---|
| Apple | { Bud Moth Codling Moth Scab Curculio San José Scale | { Arsenate of Lead and Bordeaux. (Lime- Sulphur may be used instead of Bordeaux.) Lime-Sulphur or Misci- ble Oil. | { Just before blossoms open. Autumn after leaves or have fallen. | { Immediately after petals fall. Early Spring before leaf buds swell. | { 10 days later. If badly infested make both applications. |
| | | | | | |
| Cabbage Camellifer | { Green Worms | { Arsenate of Lead if plants are not head- ing. | { If heading, apply Hellebore. | | [beds. |
| | | | | | |
| Carnation | { Red Spider Rust | { Clear water. Copper-Sulphate, 1 lb. to 20 gals. water. | { Syringe off the plants 3 times a week, being careful not to drench the In the greenhouse once in 2 weeks. In the field once a week. | | |
| | | | | | |
| Cucumber Melon Squash | { Wilt Mildew Striped Beetle Borer | { Bordeaux. Bordeaux. As soon as stems are long enough cover the joints with earth so that secondary roots will develop. | { Middle of July. Keep the vines well sprayed to make them distasteful to the beetles. | { 10 days later. | |
| | | | | | |
| Currant Gooseberry | { Currant Worm Mildew | { Arsenate of Lead and Bordeaux. Bordeaux. | { As soon as worms ap- pear. Before leaf buds open. | { Use Hellebore after fruit is half grown. After blossoming. | [soil. |
| | | | | | |
| Potato | { Scab | { Soak seed before cutting for 90 minute in corrosive sublimate 1 oz. to 7 gals. water. Plant in clean | | | { Repeat every 2 or 3 weeks, omitting arsenate of lead if beetles are not in evi- dence. Wet spells fol- lowed by hot weather are favorable to development of rot and blight. |
| | | | | | |
| Potato | { Beetles Blight or Rot | { Arsenate of Lead and Bordeaux. | { When plants are 6 or 8 inches high. | { 2 weeks later. | |
| | | | | | |

times. There will probably be orchards in the neighborhood that are not sprayed. Have that fact noted. Be sure to take them to the same two orchards in the fall when the fruit has matured. The difference in the quality and quantity of fruit will be a good object lesson.

While the children are interested in their gardens and in protecting their plants from insect enemies and while the younger members of the school are actively at work making observations, collecting and talking about various types of insects, a splendid opportunity is offered for interesting the whole school in some definite piece of work in insect control. Perhaps the tent caterpillar has become a real pest. The boys and girls may be organized into companies or clubs for the purpose of doing extermination work. They should study the best methods and learn to apply them. While the work is being done they should observe the kinds of trees on which the caterpillar is found and the nature of the damage which the insect does. This study offers a good opportunity for teaching the functions of the leaves and their relation to the life of the tree.

Happily the farmer is not left to fight his battles with plant enemies all alone. Nature has provided helpers for him. If the youthful gardeners realized how hard the toads work for them they would protect them from harm in every way possible.

Some insects are useful because they live on other,

harmful kinds. These are called cannibals. The most common of this type is the lady-beetle or lady-bug, as it is sometimes called. This little creature eats only insects and usually only harmful ones.

But the birds are perhaps the most useful helpers of the farmer. Enemies to plant life and the farmer's crops often come in great bands, very unexpectedly. The birds are usually there as scouts to destroy them. Many millions of dollars worth of crops are destroyed every year by insects, but many millions more would be destroyed were it not for the birds.

Birds are like patrols of the air, like scouts on watch for the farmers' enemies. The robin searches the fields and destroys millions of grasshoppers, earth worms and cutworms. The bluebird helps the robin and in addition is found at work among the leaves and branches of the fruit and shade trees. Other birds such as chipping sparrows, after grasshoppers, black-birds, bobolinks, and meadow-larks in fields and pasture lands and the thrushes and chewinks in the hedge rows and among the leaves in under growth on the edge of the woods should be studied.

If the children come to have an intimate knowledge of birds they will naturally seek to protect their nests and their young. The resourceful teacher will be able to extend this study indefinitely. It is excellent nature study and bears directly upon agriculture. But the teacher must not be disappointed to discover that all pupils are not equally interested in it.

Propagation and dissemination

During the planting season then is the time to study the methods by which plant life is propagated and disseminated. Some of the topics that should be considered here are the propagation of plant life, (a) by seeds, (b) by plants, (c) by roots, (d) by tuber, (e) by cuttings, (f) by buds and grafts.

The children all know about raising plants from seeds. They probably do not all know how the white clover and the strawberry branches off, takes root, forms new plants and is thus able to live for years under hard conditions. They should make a study of this fact. They may not know that they may multiply their grapevines by simply taking a branch of the mother plant and covering it over with soil until it has rooted and then cutting off the piece thus rooted. It may then be transplanted. They should do this at home or at the school. They should also be encouraged to find other examples of plants that are propagated in this way.

The sweet potato is an example of plants grown from roots. The edible portion of the sweet potato is simply an enlarged root. In sections where this vegetable is grown the children may raise their own plants.

The white, Irish or field potato is a modified stem. Children, particularly those living in farming communities, are more or less familiar with the method of producing the potato plant. But to those living in vil-

lages and small towns who have the school garden or who are interested in a home garden the study of how to grow the potato plant would be of interest.

The study of the potato with the potato before the child, or better still with one in the hands of each child, should be made. The eyes should be pointed out, counted and their function explained. How and why the potato is cut for planting should be made plain. Then each child who is going to plant should cut his own potato. Doing this, planting it and watching for the sprout to come through the surface of the ground, will be good nature study and also good agriculture.

As suggested above, nature study and elementary agriculture should lead to better-kept school grounds. There should be some rose bushes around the school house. Getting them there offers an opportunity to teach propagation from cuttings. This may be done by using a shallow box or pan, filled with clean sand wet thoroughly. The cutting is forced down into the sand so that two or more buds are below the surface leaving one above. The sand is then firmed about the slip. The box should be kept in a light warm place until the plant is well started. All the while the sand should be kept moist.

Budding and grafting are simple operations and easily learned. They should form a part of the work of the older pupils in the school.

Seed dissemination is a fascinating study. For lack

of space attention only can be called to this subject. Pine cones, milkweed pods, thistles, acorns, buttercups; the work of squirrels, birds, bees, and winds all provide an abundance of material for profitable nature study related to agriculture.

Harvest time

As soon as crops begin to mature some attention should be given to judging vegetables. Success in any line of agriculture will depend upon the standards by which the farmer measures the quality of his products as well as the processes by which he produced them. The boy or girl who raises onions or beans should know how they would be graded if put in the market. He should learn that certain standards are set whereby all farm products may be judged or graded. If he is growing tomatoes or corn he should be familiar with the standard characteristics of the variety grown and be able to tell whether his product possesses those qualities or characteristics. The harvesting and marketing methods that are practiced in the community should be studied, together with methods of grading, bunching, packing, basketing and selling. If possible the children should be taken to the farms in order that they may see the operations going on. If they live near enough to a market to make it possible, they should go there and see the farm products as they arrive. They should observe their condition, packing, etc.

If pupils wish to save seed for next year's planting, now is the time to select and prepare it. The plants from which seed is to be saved should be healthy and vigorous. They should be those which develop an early and an abundant crop of the most desirable product. Seed should not be saved from the leavings in the garden or field.

If a child has a cucumber, cantaloupe, pumpkin, squash, or tomato that is true to type, that grew on a strong and vigorous vine, it would be well to encourage him to save the seed. The easiest way is to cut the fruit in half and scrape out the seed. Allow the seed mass to stand in a wooden vessel in a warm place for a day or two. The sticky material will become dried out. Stir the mass or rub it with the hands; add water and after the seeds have settled to the bottom pour it off. This will carry off the refuse material and poor seeds, leaving only the good seeds at the bottom. Spread them out on newspapers and when they are dry store carefully in a dry place but not in air-tight containers.

Some vegetables require two years in which to develop seed. The plant or roots is grown in the fall, stored over the winter and set out the next spring to develop the crop of seed. To this class of vegetables belong beets, cabbage, carrots, celery, kohl-rabi, leeks, onions, parsnips and turnips.

Seeds from cucumbers and cantaloupes or from squash and pumpkins that are grown near one another

are worthless because they mix. It should be remembered also that seed from any two vegetables belonging to the same class as turnips and kohlrabi, or leeks and onions, should not be saved if they grow near each other and were in blossom at the same time, because they are apt to mix.

The harvest time is the time for exhibits, harvest festivals, etc., as well as a time for planning for future crops and for marketing the present one. School children should be made a part of these community gatherings and activities. They may participate in a variety of ways. (1) Each child that had a garden might bring an exhibit showing something of the variety and quality of his products. (2) Contests in judging farm products, such as potatoes, corn, beets, cabbage, apples, squash, etc., might be held. (3) Demonstrations in food conservations and canning might be given. (4) Records, reports and stories of accomplishment might be read and exhibited. (5) The young children should be given an opportunity to take part in the exercises of the day in games and by exhibits.

Records

The keeping of records does not belong to any particular months, but to all months. The plan of the garden, the planting chart, the result of seed testing that may be done, notes of special incidents relating to the work, such as experiences with insect pests, plant diseases or seasonal or climatic conditions would

form a legitimate part of the records that should be kept by a group studying elementary agriculture by the project method. Besides these records an account of expenditures and receipts should be kept. This will emphasize the economic lessons that such a piece of work should aim to teach.

If this phase of the work is systematically carried out it offers good opportunity to vitalize the teaching of the other subjects in the curriculum. Gathering material from nature will quicken the observation; getting it from books, bulletins and reports will teach the value of learning to read understandingly; noting observations will emphasize the importance of writing, spelling and English. Studying climatic conditions and weather variations will lay a foundation for the interpretation of geography. Working out percentage of germination and determining profits and losses will be the application of arithmetic.

RELATION WITH OTHER SCHOOL SUBJECTS

Reading

Some of the class reading in the upper grades should be from the bulletins and catalogues that are being consulted. These and suitable books should be read for *specific* information. This reading should not be done with the intention of memorizing or of learning definitions. A practical man reads to find the answer to questions that arise in his work. Pupils

in their reading on agriculture should read in this same way.

Pupils should be encouraged to bring to school and read to the class passages from magazine articles, newspaper paragraphs and selections from farm papers that bear upon topics related to their school project work or home interests.

Composition

Letters may be written in school for the bulletins and catalogues that the class wishes to consult. Letters may be written to various people and organizations whom it may be desirable to interest in the school projects. The replies to these letters will generally be good models to study for form and clearness and sentence and paragraph structure.

The project itself will suggest many subjects for paragraph compositions, e.g., Testing Seeds; Planting Seeds; Judging Corn, Apples, Potatoes, Tomatoes, etc.; How I Made My Hot-Bed; How I Felt After Spading for an Hour, etc.

Arithmetic

A great variety of arithmetic problems lie hidden in agricultural projects. A few topics are here suggested: —

Measurements: —

Length and width of the plot cultivated.

Area in square feet.

What part of an acre?

What part of the plot is devoted to each vegetable?

What is the perimeter of the garden?

What part is devoted to walks?

Costs: —

Complete cost of cultivation — seeds, fertilizers, tools, marketing; receipts; profit (or loss).

Percentage: —

Compute percentages of the different chemicals given in formulas of fertilizers and also percentages of various chemicals per ton in different substances.

All the relations given under measurements and costs may be worked out in per cents. Care should be taken here, as in other work, however, not to force the correlation.

Business forms: —

Letters.

Bills.

Receipts.

Inventories.

Discounts.

Market prices.

Commission merchants' profits.

The school agricultural interest should extend into the community, as has been suggested before. On the home farm will be found an abundance of data for the making of "community" problems, e.g., How much corn was sowed per acre? How much was harvested per acre? What was the per acre per cent of increase? etc.

Other relations

Spelling, drawing, geography, history, and manual training may each be vitalized by relating it and applying it to the school agricultural projects that are en-

gaging the pupils' interests. In fact these related studies cannot escape being drawn into these projects, if the work is carried on in the spirit that is here suggested. Many teachers are doing these things. All may do them.

THE TEACHER'S HELPS

Agriculture is a science made up of many sciences and an art that has never been mastered by the most skillful. The teacher, although she be quite competent to carry out the program of a modern school, cannot be an expert farmer. But she should not hesitate to introduce and carry on a course in elementary agriculture for that reason. After all a good school is a place where there are numerous opportunities for education, rather than a place where the teacher is the most learned person in the community. Does the teacher see the usefulness, the educational importance of relating the pupils' lives to the productiveness of nature? She will then become a student, with her pupils, of this most fundamental science and art.

She may have for the asking almost innumerable helps. The neighborhood farmers will help. The Grange and other community organizations will help. The county and state agricultural organizations and agricultural agents will help, and so will the state leader of junior projects and the director of boys' and girls' club work.

There are many good textbooks on the subject of

elementary agriculture that may be had at small cost. There is also much information and practical suggestion in the bulletins and circulars issued by the departments of agriculture in the state colleges. This is all sent free on application. The bulletins of the National Department of Agriculture may be had free by writing to the representative of your district in Congress or to one of your senators. A few of these numerous publications are given in the following bibliography.

COLLATERAL READINGS

1. *On nature study* : —
 - a. *School of the Woods*. William J. Long.
 - b. *The Lay of the Land*. Dallas Lore Sharp.
 - c. *Signs and Seasons*. John Burroughs.
 - d. *Citizen Birds*. Mabel Osgood Wright.
 - e. *Grasshopper Green's Garden*. Julia A. Schwartz.
 - f. *The Travels of Birds*. Frank M. Chapman.
 - g. *The Nature-Study Idea*. L. H. Bailey.
 - h. *The Holy Earth*. L. H. Bailey.
2. *On agriculture* : —
 - a. *Among School Gardens*. M. Louise Greene.
Chapter II.
 - b. *Agriculture for Beginners*. Burkett, Stevens, and Hill.
 - c. *Elementary Agriculture*. James S. Grim.
 - d. *The Teaching of Agriculture*. A. W. Nolan.
3. *On planning the garden* : —
 - a. *Among School Gardens*. M. Louise Greene.
Chapter V.
 - b. *Little Gardens for Boys and Girls*. Myrta M. Higgins.
Chapter III.
 - c. *Garden Steps*. Ernest Cobb.
4. *On special crops* : —
 - a. *How to Make the Garden Pay*. Morrison and Brues.
Chapter III.
 - b. *The Story of Corn*. Eugene C. Brooks.

- c. *Home Projects Series*. Nolan and Greene.
 - Growing corn.
 - Vegetable gardening and canning.
- 5. *Elementary agricultural arithmetic* : —
 - a. *A Rural Arithmetic*. Madden and Turner.
Chapters I-IV.
 - b. *Farm Arithmetic*. Burkett and Swartzel.
- 6. *General books* : —
 - The Story of Foods*. Forrest Crissey.
 - Vocational Guidance*. J. Adams Puffer.
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